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proceedings of NUTRITION EDUCATION CONFERENCE

April 1 - 3, 1957

Washington, D.C.

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U. S. DEPARTMENT OF AGRICULTURE

Theme: increasing the effectiveness of nutrition education

UNITED STATES DEPARTMENT OF AGRICULTURE
Miscellaneous Publication No. 745

Foreword

The Nutrition Education Conference which was held in Washington April 1 to 3, 1957, was undertaken in order to assess the current status of nutrition education and to bring forth ideas and means for increasing its effectiveness.

This Conference was the third in a series of national nutrition conferences. The first, the National Nutrition Conference for Defense, was called by President Roosevelt in May 1941 to discuss problems of nutrition for defense and to formulate a national program of action. The second, the National Food and Nutrition Institute, held in December 1952, was sponsored by the U. S. Department of Agriculture, the National Institutes of Health of the Public Health Service, U. S. Department of Health, Education, and Welfare, the Food and Nutrition Board of the National Research Council, and the Interagency Committee on Nutrition Education and School Lunch. It reviewed progress and considered ways to strengthen existing nutrition programs. In 1957 the third Conference placed emphasis on presenting nutrition facts in such a way that people will be stimulated to make use of them to improve their food habits.

It is hoped that this Conference may have engendered new ideas, awakened new enthusiasm, and opened new vistas for accomplishment in nutrition education, and that its influence may be far-reaching.

Hazel K. Stiebeling

Hazel K. Stiebeling
Director
Institute of Home Economics

Washington, D. C., November 1957

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Nutrition Education Conference

Introduction

The Nutrition Education Conference held in Washington, D. C., April 1 to 3, 1957, was planned and sponsored jointly by the U. S. Department of Agriculture through its Nutrition Committee[1] and the Interagency Committee on Nutrition Education and School Lunch.[2]

Participants numbered some 200 from 38 States, Puerto Rico, the Virgin Islands, and the District of Columbia. They were drawn from the fields of elementary education, home economics education, public health, extension service, school lunch administration, and other groups concerned with nutrition education.

The purpose of the conference was to focus attention on nutrition education and how it may be made more effective.

The program was planned to give the participants in general sessions information on various problem areas in nutrition education as background for subsequent discussions in small work-study groups. The program began with presentation to the group of what is known of current family food consumption and of the principles of learning as applied to nutrition education. It continued with a symposium on nutrition education problems of different age groups from infancy to old age, and went on to a description of the ways in which society and culture influence nutrition education.

Following the general information-giving and question-and-answer sessions, participants met for a day in small work-study groups, each a cross-section of the various groups represented at the conference. On the final day they met again in assembly to hear a report on the highlights of their discussions and to witness a graphic presentation of how they might put their ideas into action. The conference ended with a luncheon which offered the participants an opportunity to consider together, in State and regional groupings, how to put the results of the conference to work back home.

The proceedings which follow include the talks given at the general sessions. They also include a summary of the topics dealt with by the 12 discussion groups, highlights of the work groups' discussions, a demonstration on the social action process, plans for follow-up back home, a plan of the conference, and the list of participants.

These proceedings were prepared by the staff of the Institute of Home Economics in cooperation with staff of the other sponsoring agencies.

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[1] This committee has membership from four agencies in the Department: Agricultural Research Service, Agricultural Marketing Service, Commodity Stabilization Service, and Federal Extension Service.

[2] Membership in this committee is from the following Federal agencies: In the Department of Agriculture--the School Lunch Branch of the Food Distribution Division, Agricultural Marketing Service; the Institute of Home Economics, Agricultural Research Service; Federal Extension Service; and the Foreign Agricultural Service. In the Department of Health, Education, and Welfare--the Children's Bureau, the Office of Education, and the Public Health Service. In the Department of the Interior--the Bureau of Indian Affairs and the Fish and Wildlife Service. In the Department of State--the International Cooperation Administration. In addition, the American National Red Cross, and the North American Regional Office of Food and Agriculture Organization of the United Nations have representation.

Papers Presented at General Sessions

Family diets today

Faith Clark, Director, Household Economics Research Division,
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Families in the United States today, as for some years past, are in a favorable situation with respect to food. Generous and varied food supplies are available on the market. Larger numbers of families can spend more than ever before to buy food because recent income increases have for the most part more than kept up with increases in consumer prices. So logical questions to ask are: Has increased spending brought better diets? How many families are there now that need help with diets? What groups in the population still have diets in need of improvement?

Some answers to these questions come from the nationwide survey of household food consumption made by the Department of Agriculture in the spring of 1955. Five reports issued within the past few months cover the detailed quantity and expenditure data on the various foods. A report on "Dietary Levels of Households in the United States" has just been issued and four regional reports are in preparation. It is from these sources that my talk is drawn.

Family Food Consumption Patterns

First, I would like to describe briefly what the average family spends for food and what this expenditure buys. The average expenditure for food by all housekeeping families of 2 or more persons in the United States was $28.50 a week in the spring of 1955. To this average (farm and nonfarm families combined) is added $2.70 for food from the home farm or garden or for food received as gift or pay, making a total of more than $31 for the week. With an average of 3.6 persons in each family, the total money value of food for each person came to $1.25 a day. Food prices have risen 2 percent since the 1955 survey so a survey today would likely show average expenditures of almost $1.30 a day for each person.

Average expenditures for food away from home came to $5 a week in spring 1955. This $5 for food away from home is about one-sixth of the total $31 for all family food. About 80 percent of all families--farm and nonfarm--reported at least one member who ate meals or snacks away from home during the week of the survey.

In selecting food to prepare at home the average homemaker used the largest portion of her food money (36 percent) for meat, poultry, fish, and eggs and nearly half as much (15 percent) for milk and milk products other than butter. About 19 percent went for potatoes and other vegetables and fruits, 10 for bread and other grain products, and the remaining 20 percent for fats, sweets, beverages, and all other foods.

In terms of quantities of food to use in making up family meals, these figures add up to a generous diet. For example, 14-1/2 pounds of meat, poultry, and fish, the average quantity used by households in a week, would provide enough for two servings for all household members on most days of the week. Sixteen quarts of milk and its calcium equivalent in cheese and ice cream would provide the equivalent of almost two-thirds of a quart of milk a person a day. A dollar a week was spent per family on coffee and tea.

To go on with illustrations of modern food consumption patterns--1 out of 3 families used steak (other than round) at least once in the survey week in 1955. Almost 2 out of 3 used ground beef (commonly termed hamburger). The spring of 1955 was a good year for consumers so far as meat was concerned since supplies were plentiful and prices relatively low.

New marketing developments make it possible for increasing numbers of families to take advantage of time-saving foods. For example, prepared mixes for baked goods (including pancake mixes) were used by 2 out of 5 families during the survey week in the spring of 1955. Brown-and-serve rolls and ready-to-eat rolls were both used by 1 out of 10 of the households. One out of 5 families purchased cake and almost half that many, pie. These figures illustrate the use of prepared foods. By now--April 1957--probably even larger proportions of the families are using some of these foods and especially some of the newer frozen foods. Even allowing for some increase, however, it is wrong to think that a large share of the household food dollar is spent on foods that only have to be warmed up to serve. When we listed the foods you might call prepared and partially prepared, we found that only 28 percent of the total food budget of city families could be thus accounted for, according to the 1955 survey, and the most important of these foods were such long-familiar items as bread and other baked goods, canned vegetables and fruits, rather than new food products. Admittedly, this is a much larger share than in our grandmother's day but it is not so large as popular opinion has it.

The food pattern that I have sketched is sometimes referred to as "eating high on the hog." Of course, there are infinite variations--from income class to income class, city to farm, region to region, and so forth.

I want to direct the major part of my talk to the questions I raised earlier--How well fed nutritionally speaking are we today? Are diets better today than some years ago? What population groups have diets in need of improvement?

Dietary Levels in 1955

Average amounts of food brought into household kitchens were sufficient in all regions of the United States to provide more than the Recommended Dietary Allowances of the National Research Council for calories and eight nutrients calculated in the 1955 survey. When the calculations for each household in the survey were scrutinized separately, however, many had food supplies that did not meet Recommended Allowances.

Chart 1 shows the need for improved diets for the country as a whole. The proportion of family diets not meeting the NRC allowances was greatest for calcium (29 percent) and next largest for ascorbic acid (25 percent). From 15 to 20 percent of the households had diets below recommended levels in vitamin A, thiamine, and riboflavin. A tenth or fewer had food furnishing less than recommended amounts of protein, iron, and niacin.

Few of the families, however, had diets that were very low in these nutrients. About 10 percent were below two-thirds of the allowance for ascorbic acid--or 50 milligrams per adult-male equivalent--but 50 milligrams is not considered a very low level by some authorities. Eight percent of all families were estimated to have food supplies furnishing less than two-thirds of the NRC allowance for calcium. The diets of even smaller percentages were below the two-thirds mark in other nutrients.

Although the charts all use the terms "diets," they should be read as meaning household or family food supplies--that is, food that came into kitchens for consumption. No information on amounts of food discarded as plate waste or during or after preparation was obtained in the survey. Hence, amounts of nutrients actually eaten may be smaller than the amounts shown in these charts. Allowance has been made, however, for estimated losses of ascorbic acid and the B-vitamins during cooking. Differences

between households in size and composition have been taken into account through the calculation of averages per nutrition unit--an adult-male equivalent. The assumption is made in these calculations that all household members share according to their relative nutritional needs.

A chart similar to this on the food intake of individuals would undoubtedly show greater need for dietary improvement. Many studies of individuals suggest this, although they are not available for the total population as in this household survey. Such studies of individuals also give about the same priority as to the nutrients most often short, with calcium and ascorbic acid at the top.

Trends in Dietary Levels

Diets in this country have shown considerable improvement since the large-scale survey in the 1930's when a third of the diets were classed as "poor." Today in probably as few as 10 percent of the households can the diets be called "poor" by the standards used in the earlier period.

Much of this improvement arises from the bread and flour enrichment program, initiated at about the time of the National Nutrition Conference for Defense in 1941. Economic conditions, newer developments in the marketing of foods, and nutrition education have also had a part in this improvement.

Almost all of the improvement, however, seems to have taken place between the mid-thirties and the early postwar period. Relatively little improvement in urban dietary levels has taken place since 1948 when a food consumption survey was made. Chart 2 compares dietary adequacy in 1948 and 1955. (Note that whereas chart 1 shows the proportion of families with diets not meeting NRC allowances, this chart and succeeding ones show proportions meeting NRC allowances.) In 1955 approximately the same proportion of urban household diets as in 1948 furnished recommended amounts of calcium, vitamin A, thiamine, and riboflavin--nutrients often in shorter than desirable supply. Some improvement in protein, iron, and niacin levels occurred but some lowering of ascorbic acid levels.

The improvement in protein, iron, and niacin levels has occurred chiefly because of the greater consumption of meat, poultry, and fish. Chart 3 shows that in 1955 consumption of meat, poultry, and fish by urban families was about 4-1/3 pounds a person a week compared with only a little over 3 pounds in 1948. The lowering of ascorbic acid levels resulted chiefly from a shift in the pattern of household consumption of fruits and vegetables. Quantities of milk, fats, and oils were about the same in the two periods while grain products continued its downward trend.

Food expenditures of city families during this period increased about one-fourth. Chart 4 shows that city families in 1955 were spending about $6.50 more a week for food than in 1948. Part of the increased expenditures may be attributed to larger average family size, part to higher food prices, but much of it is simply a shift towards more expensive types of foods including the services that go with meals eaten away from home.

It appears then, that in spite of increased spending by families for food in recent years, relatively little improvement in the nutritive content of their diets has occurred. This fact would seem to be a challenge to educational programs that deal with foods and nutrition. Food habits of many still need to be modified. Many people still need to be convinced of the value of some modification and to learn what makes up a proper assortment of foods for good health.

You will notice that the charts from the 1955 survey do not show calories, fat, iron, and occasionally other nutrients for which calculations have been made. Some had to be omitted for reasons of space. Since losses of fat in the kitchen and as plate waste

are probably high, neither calories nor fat have been included on any of the charts. Moreover, the approach in evaluating household food consumption in terms of nutrients has been to determine whether the household food furnished at least as much of each nutrient as the Food and Nutrition Board of the National Research Council specifies in its Recommended Allowances. Calorie needs of household members are difficult to estimate and there is no Recommended Allowance for fat.

Fat in Diets

Household food surveys give some interesting information about fat which I should like to summarize briefly before going on with the charts. First, the amount of fat is large. An average of 155 grams of fat per person per day was available for consumption in the spring of 1955. How much of this was actually eaten we do not know. The share of the total calories that came from fat was 44 percent, considerably higher than the 38 percent of the 1935-36 survey. Second, the amount of fat available for consumption varies among population groups. It is higher in farm than nonfarm diets. Among city families, it is higher in diets of the rich than the poor. It tends to be higher in the West than in the Northeast. Third, dietary fat is widely distributed among foods. A large share enters the kitchen as part of other foods, not usually thought of primarily as sources of fat. For example, meat, poultry, and fish provided 27 percent of the total dietary fat; milk and milk products (other than butter), eggs, baked goods, and nuts provided 33 percent. The remaining 40 percent was furnished by visible fats and oils, including bacon and salt pork. Such facts are important because of current interest in the relation of the kind and amount of fat to cardiovascular disease. More detailed analysis of the types of fats in the household diets as reported by the 1955 survey is underway.

Dietary Levels of Families in Four Regions

I propose now to return to the charts to review how some of the various groups in the population fare with respect to the nutritional adequacy of their diets. This information will give you some background for your job in nutrition education.

In breaking the nation's households into smaller groups for comparison, let us look first at the four major regions as defined by the Census: The Northeast, the North Central region, the South, and the West. The next two charts (Nos. 5 and 6) show the percentages of the households in each region that had food supplies that furnished the Recommended Allowances of the National Research Council. In general, households in the three regions in the North and West fared equally well, with households in the South less well fed, nutritionally speaking. The chief exception was in thiamine, in which diets of families in the Northeast were more likely to fall short of recommended levels than diets in the other regions (chart 5). Consumption of grain products and of pork was relatively low in the Northeast. This accounts in large part for the fact that only three-fourths of the families had diets furnishing the recommended amounts of thiamine compared with more than four-fifths in the other three regions.

The relatively poor position of the South shows up more sharply in chart 6. Low levels of milk consumption account for the South's poor showing in calcium. Smaller consumption of citrus fruit and tomatoes and of fruits and vegetables of all kinds resulted in less ascorbic acid in Southern diets. Only two-thirds of the families in the South had food supplies during the spring of 1955 that furnished the recommended amount of ascorbic acid compared with four-fifths or more in the other regions. Whether or not this comparison might be different in other seasons of the year we don't know, as we have little information on seasonal food consumption, especially of farm families, an important group in the population of the South. What little information we have on urban diets leads us to think that the nutritive content of spring diets is closer to the year's average than that of any of the other three seasons.

City-farm Differences

Though city-farm differences in food consumption patterns have become less marked over the past several decades, considerable difference in dietary levels still exists. In general, farm diets furnish larger amounts of all nutrients except vitamins A and C.

In order to make city-farm comparisons as clearcut as possible, we have restricted our comparisons to one region at a time. Chart 7 shows the proportion of families in the North Central region with food supplies furnishing the NRC allowances. Farm families in this region use more grain products, milk, fats, and sugar. Their selection of fruits and vegetables in the spring resulted in slightly lower levels of vitamin A and ascorbic acid in their diets. Farm families have tended to use less citrus fruit than city families. By the spring of 1955, even though their consumption of this ascorbic acid-rich food had increased considerably over earlier periods, their consumption was still below that of city families in this region. It may be that in the summer and early fall when home-grown tomatoes and other vegetables are available, this difference in the vitamin A and ascorbic acid content of farm and city diets would be even smaller than the chart shows.

Chart 8 shows that city-farm differences in the South are pronounced for calcium and thiamine. Protein levels of farm diets, however, are not quite so satisfactory as those of city diets but over four-fifths of each group had food supplies furnishing NRC recommended amounts. Vitamin A and ascorbic acid are definitely more in need of improvement in farm than in city diets. Only a little more than half of the farm families in the South had diets meeting recommended levels of ascorbic acid. Almost a tenth (7 percent) of the total farm group in this region had food furnishing less than 25 milligrams per adult-male equivalent per day, one-third of the NRC allowance.

Trends in Farm Family Food Practices

Before proceeding to the effect of income on diets--the cause of many of the poor diets in the South--I would like to consider several charts that indicate some of the changes that have occurred in farm family food practices in the past 3 decades. Chart 9 shows that over a 30-year period farm families in this country more than doubled their expenditures for food (after allowing for the increase in prices) while decreasing their home production about a third. The purchased share of total food used by the farm family was only 28 percent in 1923 but by 1955 it had risen to 60 percent.

The increase represented larger outlays for both food away from home and food at home. Examples of increases in food purchased for home use by families in the North Central region are shown in chart 10. Farm families in 1955 purchased two-thirds of the fruits and vegetables they used in the survey week compared with less than one-third in the earlier year. Chart 11 shows that they purchased much more of their milk, in 1955 about a fifth of the total used compared with practically none in the earlier period. Many farm families have stopped producing milk for their own use. This has considerable nutritional significance because studies show, as in chart 12, that when farm families have to buy their milk, they use much less of it than when they produce it at home. This trend towards increased purchasing of food by farm families brings to the fore the need of farm families for help in selecting purchases wisely.

Income and Family Diets

Because of home food production, which dollarwise even now makes up 40 percent of the average farm family's food, dietary levels of farm families are, generally speaking, less related to their money incomes than are the dietary levels of city families.

In rural nonfarm and city groups, on the other hand, diets and income are quite closely related. The diets of higher income families contain larger quantities of nearly all nutrients than do those of low-income groups. Chart 13 shows that the differences,

measured in the 1955 survey, were particularly marked between the low- and the middle-income groups. For example, only 58 percent of the low-income group had food supplies furnishing the recommended amount of calcium compared with 73 percent of the middle-income group. Ascorbic acid levels rose sharply with income throughout the income scale. The increase of this nutrient with income is closely related to the increased consumption of fresh fruits and fruit juices with income.

Note that thiamine levels are little related to family income. Sources of thiamine in diets are chiefly grain products, meat (especially lean pork), and milk. Although consumption of milk and meat increases with income (meat is shown in chart 14), that of grain products and of lean pork cuts generally decreases. Hence thiamine levels remain about the same.

Reasons for the increases in levels of calcium, vitamin A, and ascorbic acid are shown in chart 15, which shows the consumption of milk, fruits, and vegetables by city families in low, median, and high income groups. The jump in calcium levels between the low- and middle-income groups that appeared in the earlier chart again appears here in milk.

Now I should like to raise the question: Would greater purchasing power, that is, larger incomes, solve the problem of dietary adequacy? From the charts you see that many families have diets furnishing less than recommended amounts of several nutrients. This does not mean that those families were poorly fed or subject to malnutrition, but it does mean that their diets were probably in need of improvement. The families with the diets most in need of improvement were for the most part those in the low-income groups and those in the South. If we carry the analysis a little further, we find that many of the poor diets in the South were related to the generally lower income levels there.

The Need for Nutrition Education

Can we then expect improved incomes to do all of the job of raising dietary levels? The answer is "No," because we see that the diets of many high-income families are not up to recommended levels. There are, of course, families at all income levels who obtain adequate diets. It is possible to obtain a nutritionally adequate diet on much less money than the average family spends but it takes know-how and enough concern with nutrition to alter food habits and spend less for some popular foods in order to shift money to foods needed for better diets. Nevertheless, the fact remains that the more people spend for food, the more likely they are to have good diets.

Now supposing all families could spend as much for food as those families in the upper third of the income distribution. The dark bars on chart 16 show the sizeable proportions of families still remaining with diets that would need improvement. The proportions having diets not meeting NRC allowances would be considerably smaller than the proportions shown for the total population, including those with low-incomes--the faint bars, which are the same bars as in chart 1.

Of course this chart does not mean that we expect to live in a society without differences among families in income. But, since increased purchasing power has helped to improve diets over the past 2 decades, it is reasonable to ask whether continued income increases would bring our nutritional situation up to where the nutritionist would wish to see it. Chart 16 shows that programs that help people towards better food habits would still be needed, even under economic conditions more favorable to improved diets than we are likely to reach.

This chart also shows that various nutrients are affected differently by changes in the economic situation. For example, a nutrition education program for a period of prosperity would not need to emphasize protein or niacin. When people in this country have more money to spend for food they are likely to buy meat. Thiamine, on the other

hand, would need to be emphasized in a nutrition program for a prospering economy. The high-income diet is likely to mean a shift away from grain products and pork, and the foods chosen to replace them are not equally good as sources of thiamine.

Continued prosperity could also mean that more families would add milk and fruits and vegetables to their diets. But, as the chart shows, even under the most favorable economic conditions, good sources of calcium and ascorbic acid would still need to be emphasized in nutrition education programs.

In conclusion, the job of nutrition education would appear to be a continuing one. Large proportions of the population--though not suffering from malnutrition--have food supplies that furnish less than recommended amounts of several nutrients. The wide opportunity for choice that homemakers now have because of larger incomes and the greater variety of foods on the market provide an increasing opportunity for improving and extending consumer education. Families whose incomes limit their purchasing power especially need help but the job extends to families throughout the income scale.

Chart 1

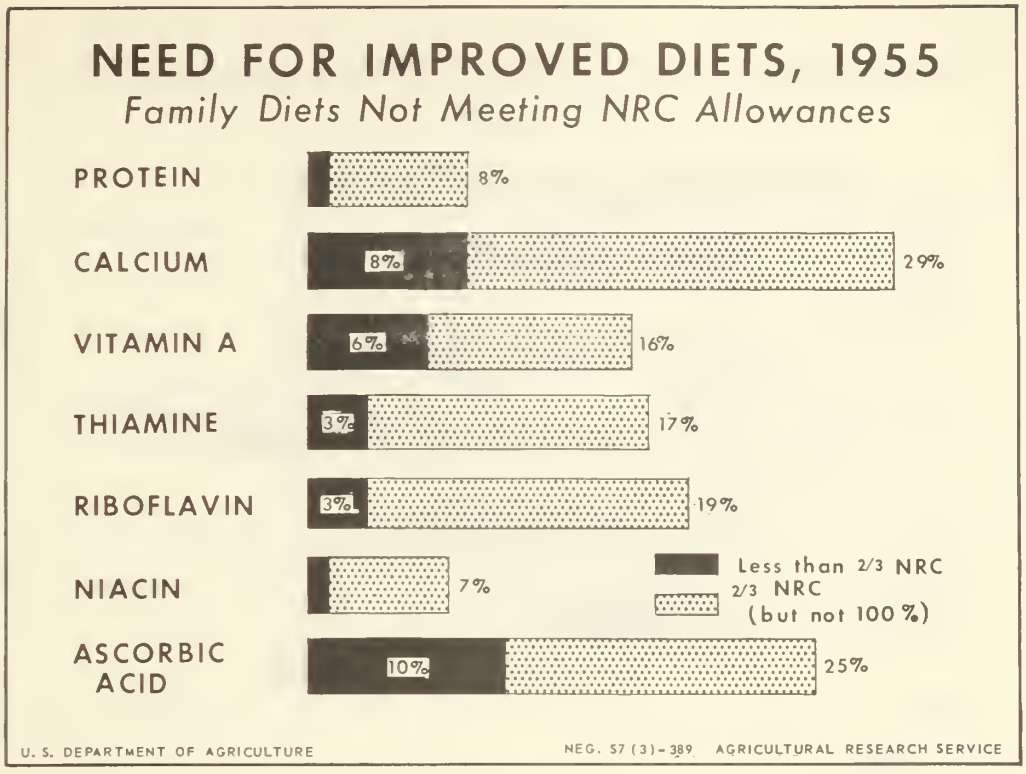

Chart 2

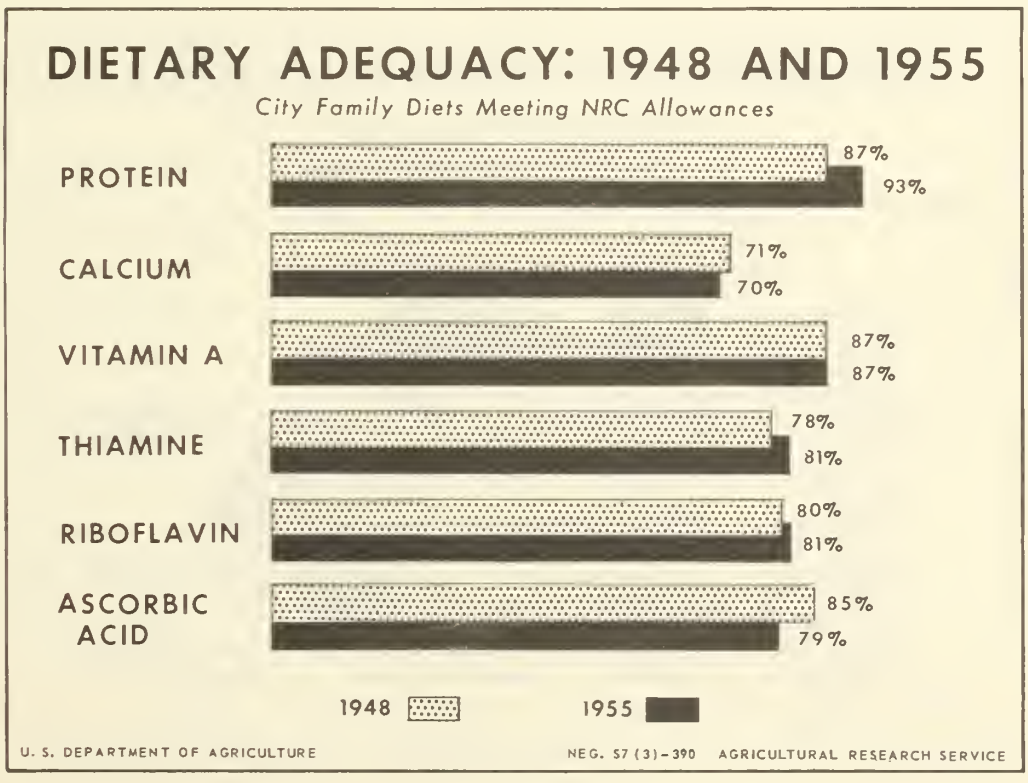

Chart 3

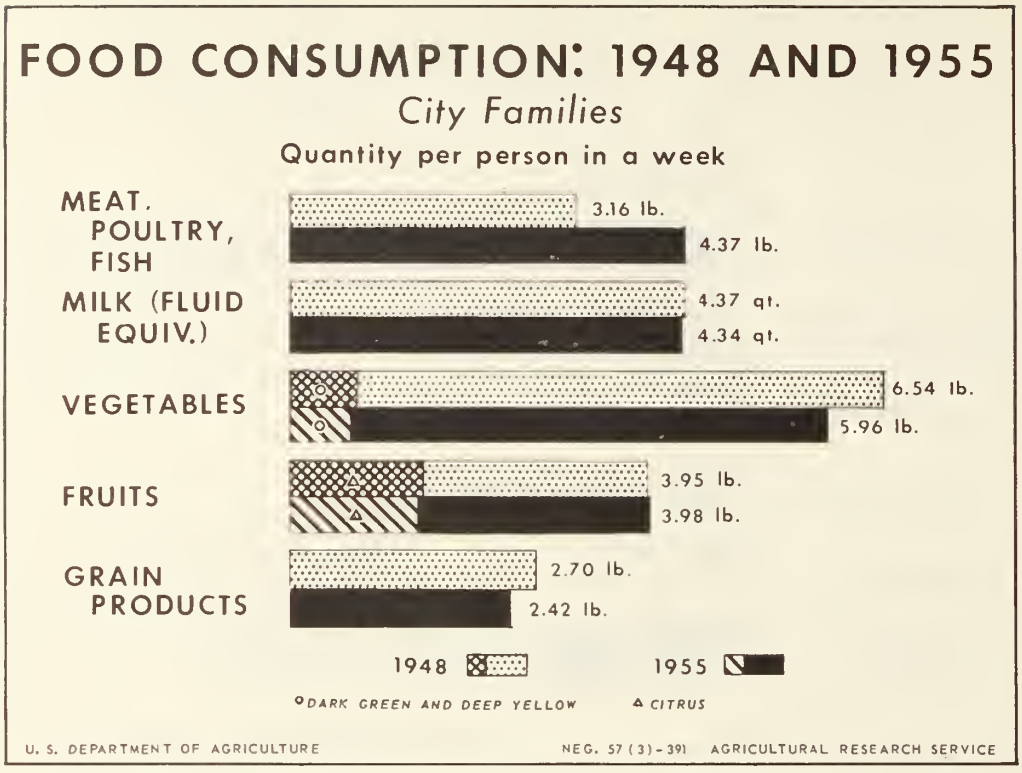

Chart 4

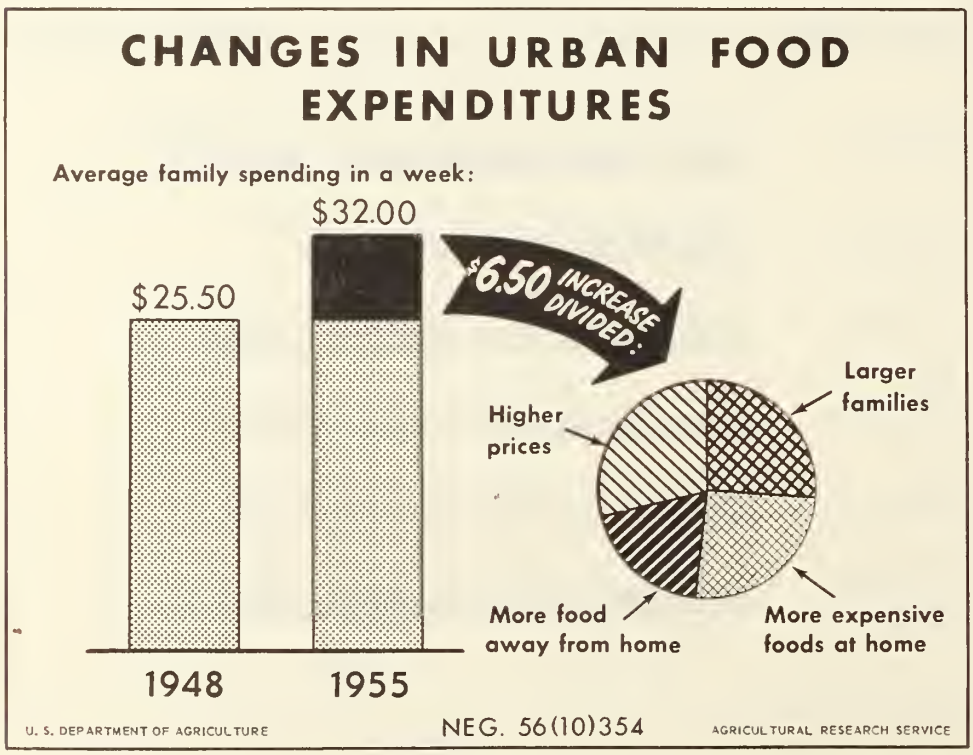

Chart 5

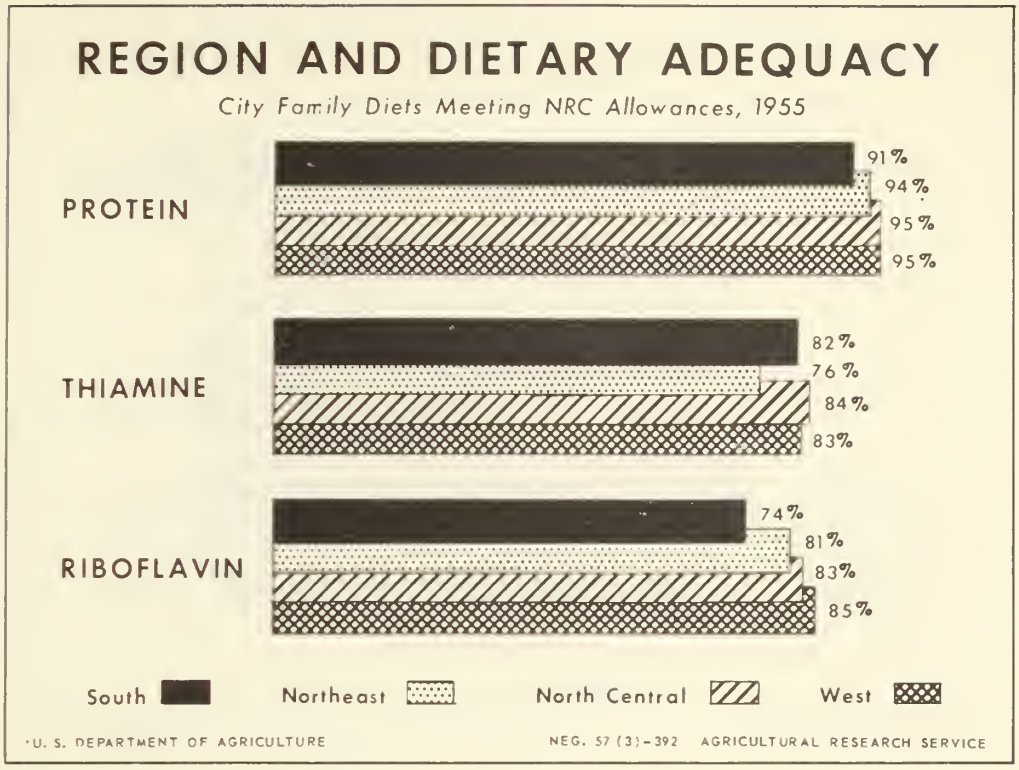

Chart 6

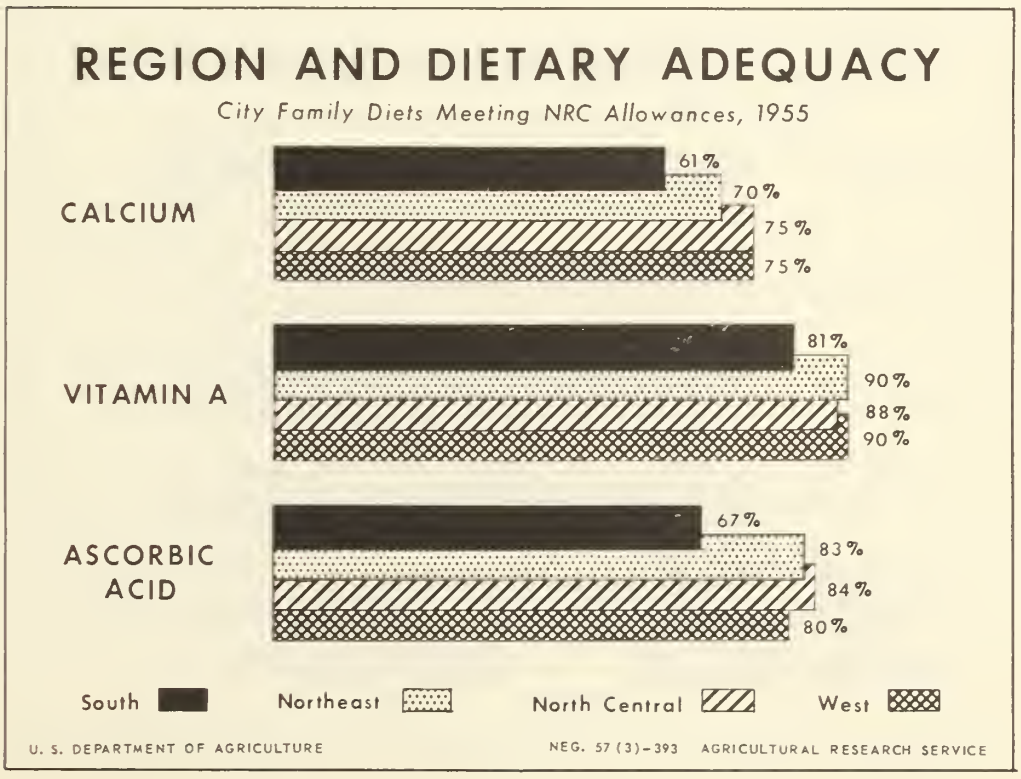

Chart 7

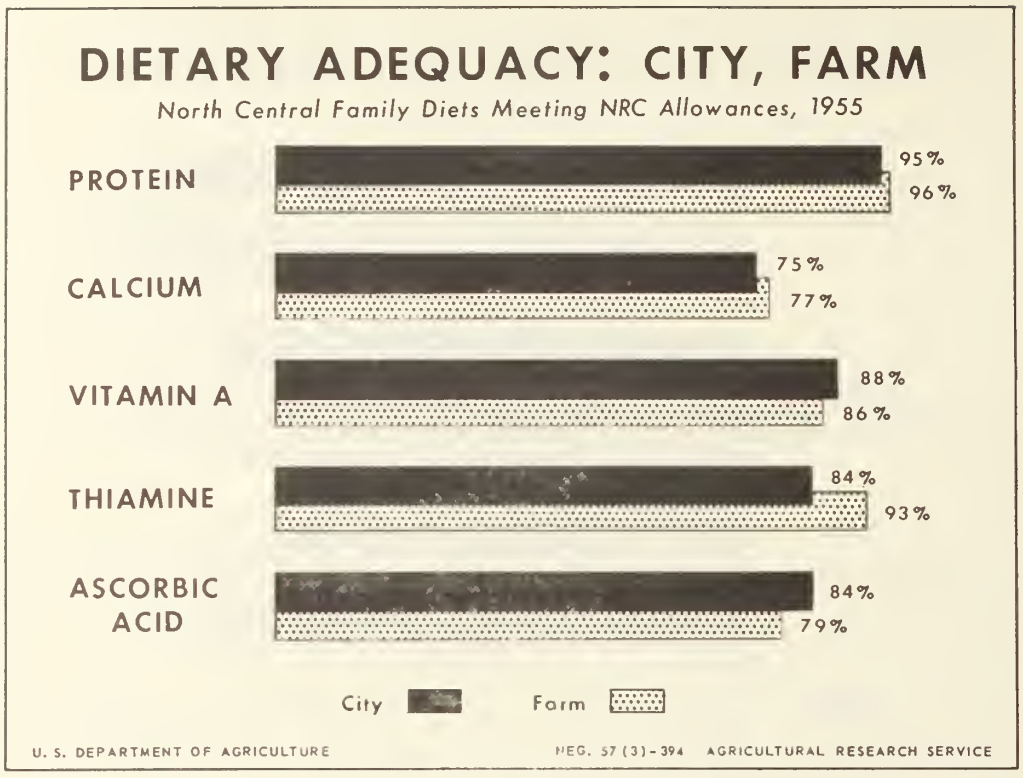

Chart 8

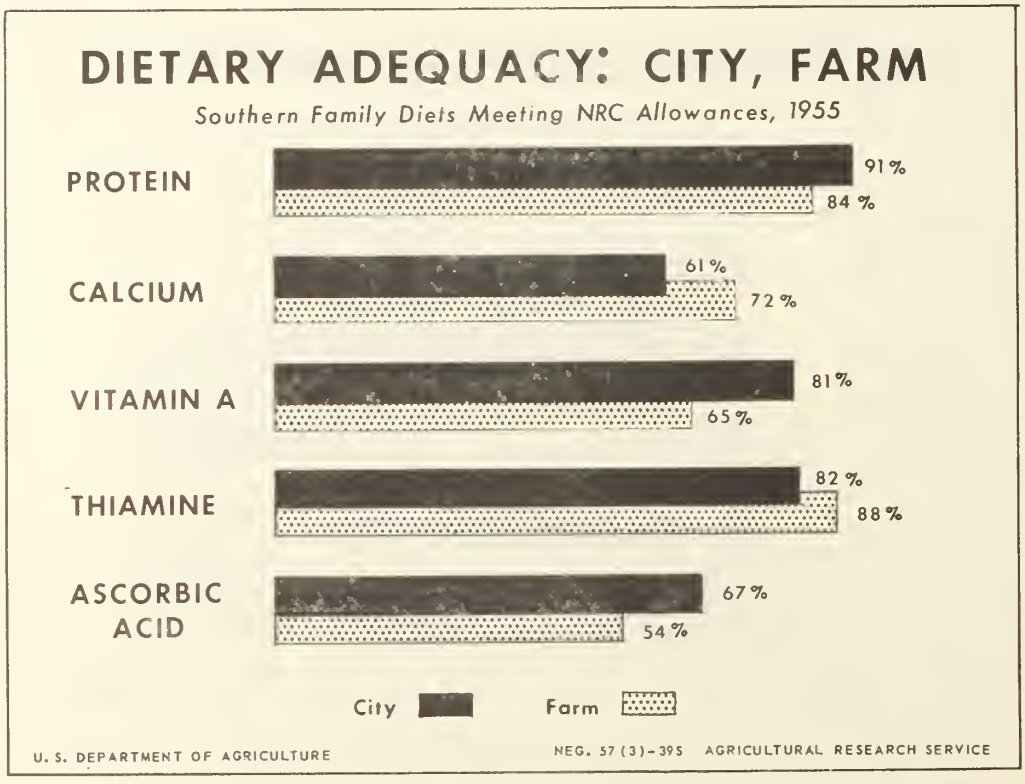

Chart 9

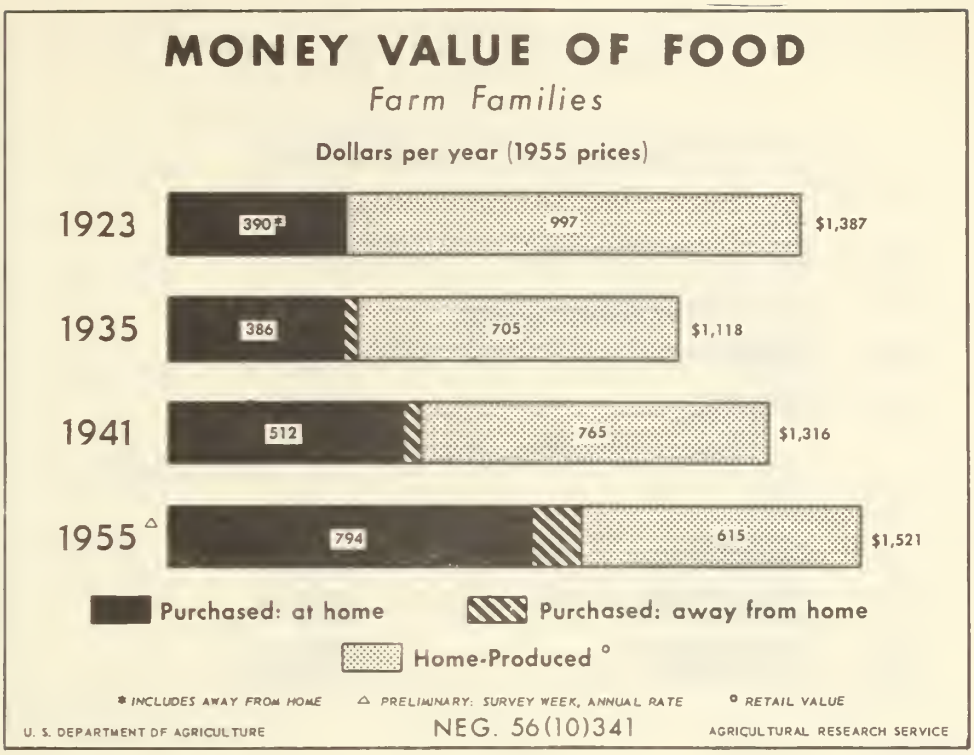

Chart 10

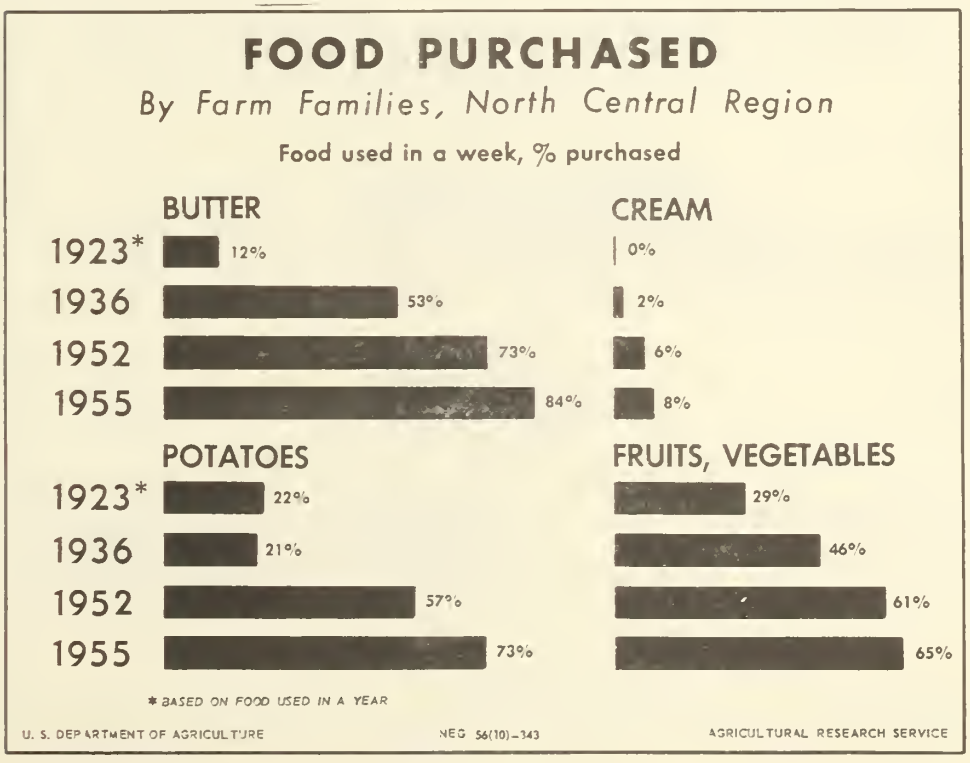

Chart 11

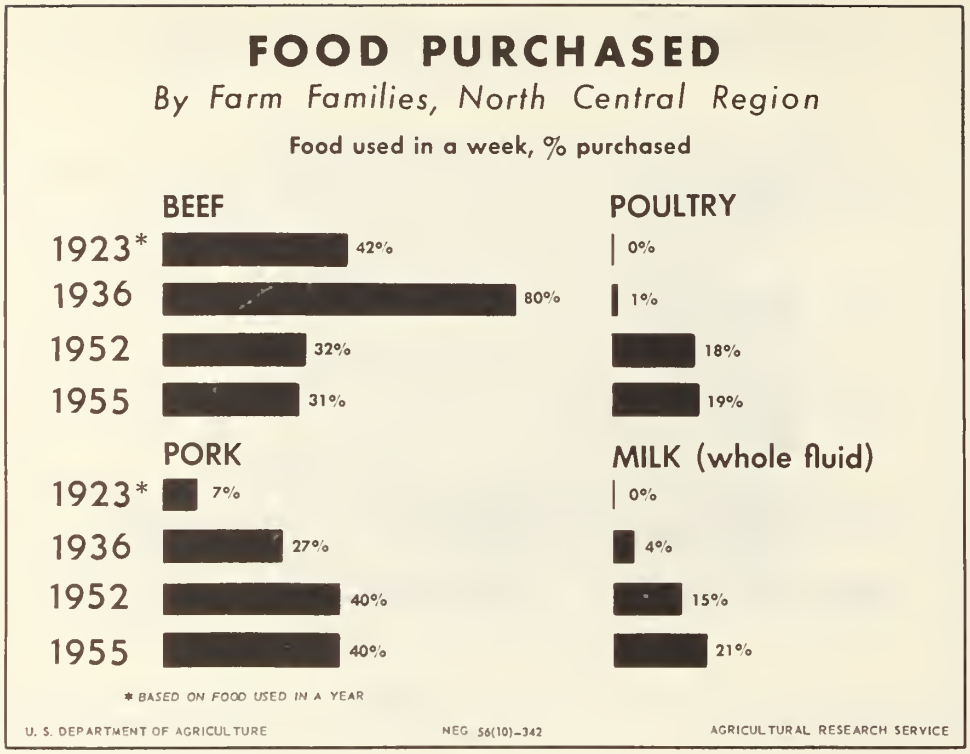

Chart 12

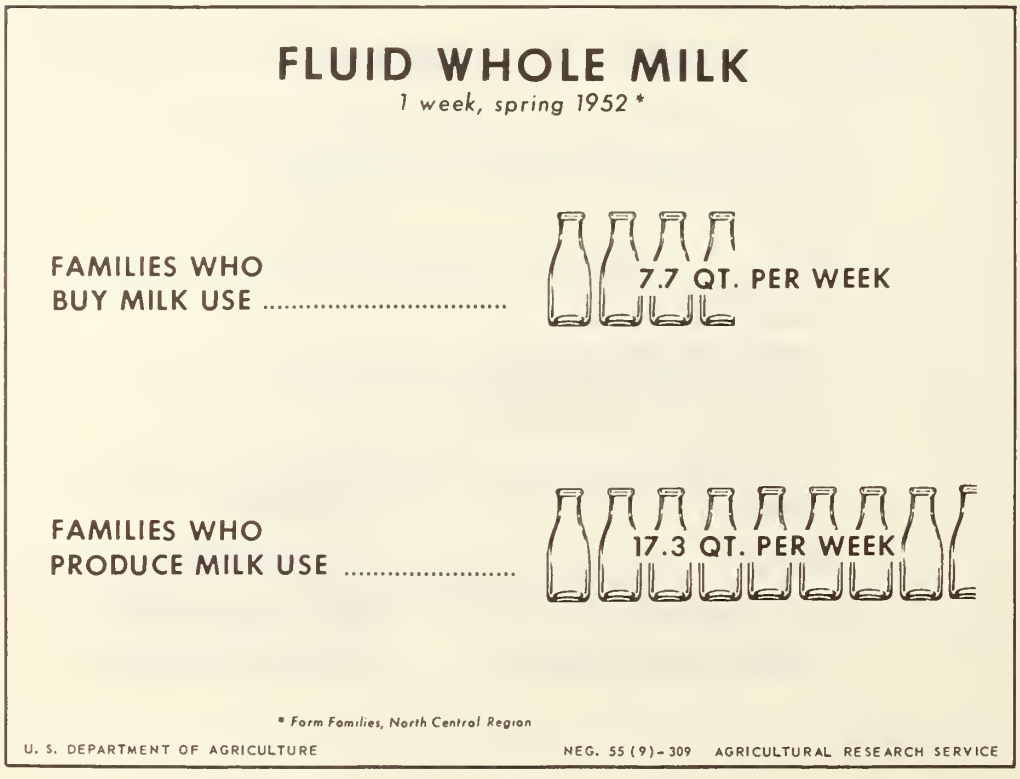
FLUID WHOLE MILK
1 week, spring 1952 *
FAMILIES WHO BUY MILK USE .....
7.7 QT. PER WEEK
FAMILIES WHO PRODUCE MILK USE .....
17.3 QT. PER WEEK
* Farm Families, North Central Region
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Chart 13

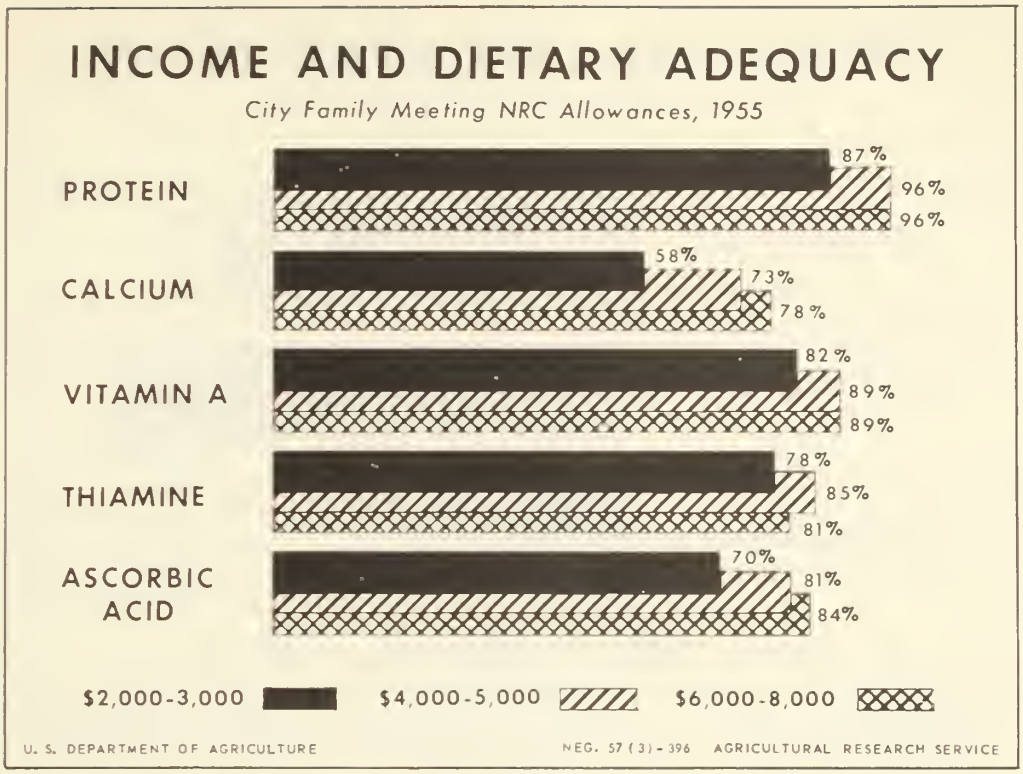

Chart 14

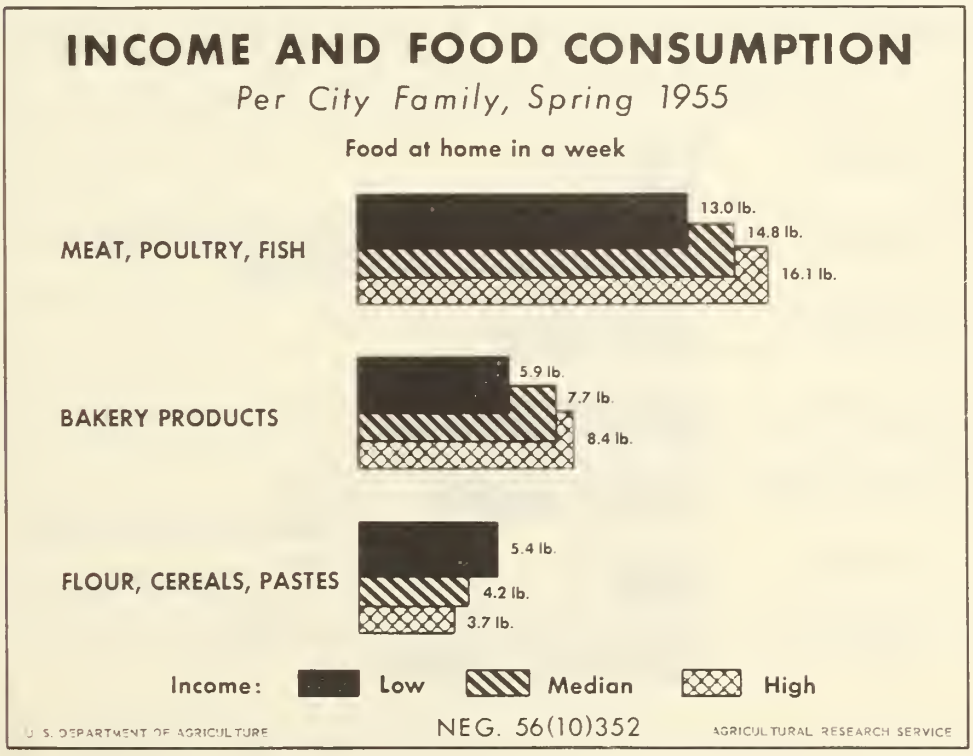

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Chart 15

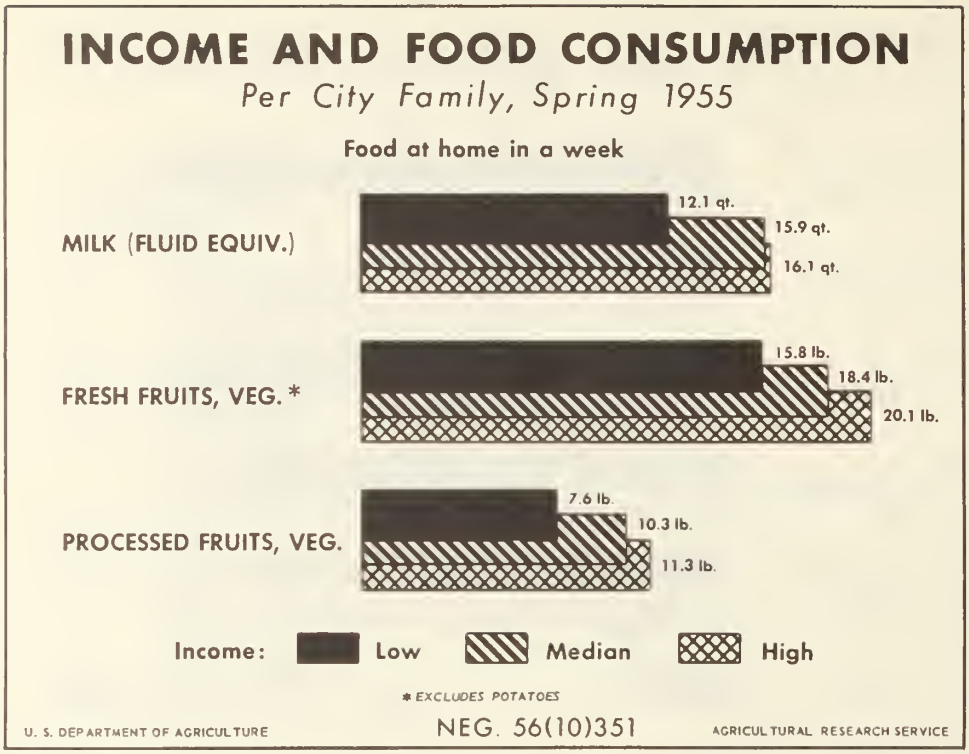
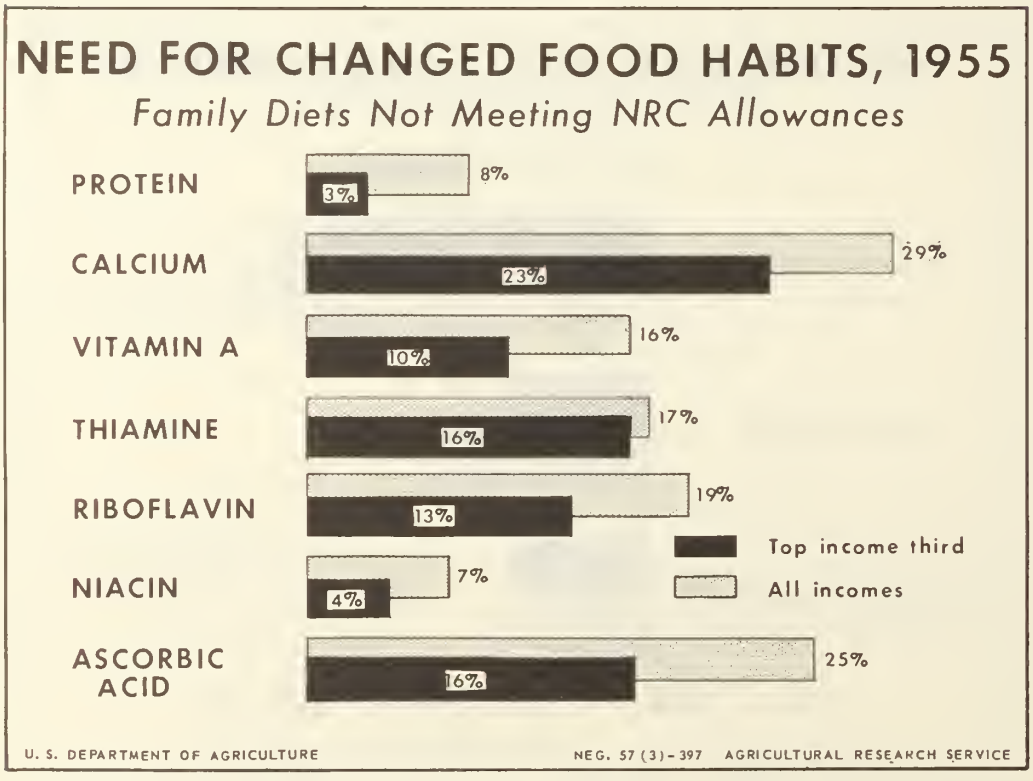


Chart 16



Principles of learning

(Summary of talk)

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Research has contributed much to current practices in the nutrition area in the homes of America. Marked improvements in food practices have been brought about by research in frozen foods, mixes, technological advances making many conveniences available in the kitchen. Often we demand new developments of this type and are indifferent to new developments in areas such as learning.

The past quarter of a century has seen new theories of learning emerge; it has also ironed out many differences among these theories. A dynamic theory of learning has emerged following the impact of a series of developments including the Gestalt and field psychologies, Freud's contributions to the dynamics of personality, studies in motivation, and the work of Mead, Benedict and others in understanding the influence of the social structure on various drives.

One would likely discover many levels of application of learning theory in visiting a nearby school. In some cases, teachers would serve as the key source of information and assume that memory work is learning. In others meager efforts are employed to involve students in "doing" things, yet of limited personal concern to pupils. In still other classes efforts are likely underway to build learning around problems students consider important and to enable students to use sound problem-solving procedures. There is no one list of "learning principles" being used in our schools today. We need greatly to study developments in learning and to explore ways of making greater application of them in our schools and in all of our efforts to help people live better. The effectiveness of nutrition education in the future will actually reflect the degree to which we make provision for the application of basic learning principles.

A variety of lists of principles of learning may be found in the literature. Perhaps the work of Cantor[1] and the Association for Supervision and Curriculum Development's 1955 Yearbook[2] will be helpful.

For clarity and emphasis I have attempted to describe five areas or "clusters" of principles of learning. The areas are not discrete and overlapping is obvious.

Area I. Learning takes place more readily when emphasis is placed on the individual.

A. Each individual is a unique individual with different hereditary, home, social background.
B. The purposes of different individuals differ, yet they must be recognized.
C. The individual should participate in planning ways of accomplishing his goals.

Area II. Learning tends to occur as emphasis is placed on the learner's perception of tasks to be accomplished.

A. Each individual has his own perception of the task.
B. The learner's perception of a task often differs from that of the teacher.
C. The leader facilitates learning through creating a readiness for the fulfillment of important tasks.

[1] Cantor, N. The Teaching-Learning Process. Dryden, New York, 1953, p. 348.

[2] Association for Supervision and Curriculum Development (National Education Association): Guidance In The Curriculum. 1955 Yearbook. Chapter IV. Selecting and Evaluating Learning Experiences, pp. 50-76.

D. All teachers (or a team representing different subjects or fields) should coordinate their efforts.

Area III. Learning is facilitated as emphasis is placed on human relations factors.

A. As emphasis is given to feelings, anxieties, concerns, questions, problems of the learner, a setting is being created for growth.
B. Belongingness and security are basic to maximum learning.
C. Permissive leadership fosters learning.

Area IV. Learning is facilitated as the learner is involved in an active way.

A. Learning is an active process.
B. Leadership should help students clarify goals, plan, experience, try out, explore, manipulate.
C. As learners assume responsibility growth is extended.

Area V. Learning is facilitated as emphasis is placed on the wise use of materials and resources.

A. The use of a variety of appropriate materials contributes to the effectiveness of learning.
B. The teacher is but one resource, there are many "people, places, and things" in the local environment which, if carefully used, contribute to the learning operation.

The above factors are suggestive of forces important in the teaching-learning process. The thesis is held that such factors have important implications for work in nutrition education. If the key task has to do with changing the behavior of people, then real emphasis must be placed on the individual as a member of a family unit. He must be helped to clarify his goals and to become personally involved in their pursuit. This must be done in an environment which is cognizant of human relations factors and provides security.

In relating learning to nutrition education perhaps we need to:

1. Discover more about the nature of "readiness" in nutrition education.
2. Explore ways of identifying and changing the attitudes of people (as individuals and groups).
3. Discover more about actual nutrition problems of individual families.
4. Investigate self-understanding in nutrition (my needs, my problem, my plan).
5. Study ways of bringing about change.
6. Identify many ways of translating current research in meaningful and effective ways.

The world we live in today has many problems of nutrition. There are both shortages and overproductions. There is prejudice, indifference, and lack of understanding of basic factors. The work of nutrition education must reflect the best we know about learning if our goals are accomplished. The effectiveness of nutrition education can be increased by emphasis on simple principles of learning.

In the discussion that followed presentation of this paper there was a request for further references to use of learning principles. These were supplied as follows:

Taba, H. New Tools for New Needs. Educational Leadership X: 433 (1953).
Kelley, E. C. What Dare We Leave Out? Educational Leadership XI: 209 (1954).
Taba, H., Noel, E., and Marsh, J. Action Research as a Technique of Supervision. Educational Leadership XII: 453 (1955).

Presiding: Ruth M. Leverton

Pregnancy, infancy, and preschool

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Growth is a continuous process and must always be so conceived. It has been said that the education and care for reproduction should begin at the birth of the female child. We must, however, select certain stress periods and concentrate our efforts at these points.

The problems in nutrition education are somewhat different for pregnancy, infancy, and the preschool period. Likewise, the agencies and individuals who assume the burden for nutrition education are different for each of these periods. The timing of the instruction also differs.

Pregnancy

Undoubtedly pregnancy is one of the stress periods. We have strong evidence to support this from the work of Burke and Stuart (1, 2, and 3), Macy and Moyer (4, 5), Dieckmann and Turner (6), and Toverud (7). The status of our knowledge in this area has been well reviewed recently by Hunscher (8).

Tompkins (9) highlights the need for preconception nutrition education. Macy (10) emphasizes that "nutritional state of the body is the result of an entire chain of past experience."

Toverud, Stearns, and Macy (11) state that prematurity ranks second as a cause of infant deaths and that between 3 and 11 percent of all live-born infants are premature. Dunham (12) says that premature birth takes a higher toll of infant life than any other condition. Stearns and Macy continue, "Investigations have confirmed that prematurity is attributed to a combination of various factors including those of nutritional, mental or social character which influence the general well-being of the mother. By studying the growth of the fetus and investigating the full nutritive requirements of the mother and fetus, the problem of prematurity will be solved and fetal and neonatal infant mortality and morbidity will be lowered." Stearns (13) found that the incidence of prematurity rose sharply with the decrease in the nutritional status of 404 pregnant women of low income living in a rural state.

What can and should be done in nutrition education is well stated by Toverud, Stearns, and Macy (11). "The great question is how prenatal care should be organized to meet the need of women most in need of direction and help. This kind of supervision must be established in such a way that the whole population understands that it is desirable and necessary. A compulsory arrangement may create opposition. Thorough and intelligent education in all communities, through school, through classes for mothers, and through classes for adolescents in close cooperation with local physicians and health authorities will create a positive attitude in the population."

They continue, "Good parent education and sound knowledge of the physiological processes going on in her body are preventive measures to combat any woman's emotional and nervous influences. The nutritional needs of the child, the choice of proper foods to meet these needs together with knowledge of amounts necessary at each age level, may form an important part of a program for education of parents. In teaching, it is well to consider the father as well as the mother, because the food prejudices and attitudes of both parents influence those of their children." May I also quote Mrs. Bertha Burke (14),

who says, "An educational program to improve the nutrition of all women of child bearing age, together with practical dietary advice early in pregnancy, should be our long-range nutrition goal."

Suppose we examine the avenues of nutrition education through which the pregnant woman receives assistance in diet.

First, through her physician, either as a private or as a clinic patient. Second, through other members of the medical team, especially nurses or nutritionists. Third, through organized programs, such as Red Cross classes on prenatal care. Fourth, through written materials either from official agencies or through articles in magazines or newspapers. Fifth, general education through organized school programs either in the elementary or secondary schools or through adult classes.

What are some of the present stumbling blocks in reaching those who, as has been previously pointed out, should be reached and affected by nutrition education?

First, there is need for agreement on what should be taught. For instance, Tompkins (15) says that we are neglecting the nutritional needs of the first trimester of pregnancy.

Second, the next problem is how can physicians, nurses, and nutritionists coordinate their work so that the teachings of all members of the medical team are in agreement? A corollary to this question is the even greater problem of assurance that physicians and nurses have adequate education in the facts of nutrition and that their advice is as soundly based on the findings of nutrition research as is that of the nutritionist.

Third, how can the facts of the effect of nutritional status on reproduction be disseminated so that the general public is made aware of their importance?

Fourth, how shall this instruction in nutrition be made vital in the life of the individual woman so that she changes her food habits? We do have enough leads in studies on motivation to know that we must use indigenous motives. Dieckmann, Turner, and Ruby (16) have pointed out that "if each patient is to be interviewed repeatedly by a dietitian, the cost of prenatal care will be increased."

What kinds of programs are practical?

From my experience during 6 years of giving dietary help in the Department of Obstetrics in the Mayo Clinic and in the Prenatal Clinics in the Rochester, Minnesota, Public Health Department, I found that handing out informational materials to the pregnant woman does not do the job. She needs to have help in discovering wherein her present diet is deficient, how she can change her diet to suit her own particular situation, even to having help with a pattern of meals, how to buy foods, prepare and serve them and even to recipes. This takes not less than 30 to 60 minutes for the initial interview and frequent checking thereafter. Busy physicians do not have enough time or the knowledge of serving food in a family to do this, yet I was constantly told by obstetricians there that the women who had such instructions really followed them. May I propose that we have studies of how effective teaching may be done most efficiently with a minimum of time of professional personnel. Can we use group instruction more effectively than we have thus far?

Are the written materials which professional agencies give out as good as they could be? Do they really motivate or could they do this better?

Have we explored as much as we should or could the team approach using all members of the medical team to coordinate efforts?

Fifth, have we thoroughly explored and exploited what Heseltine (17) called indirect education, for instance, where public health agencies give assistance in assuring that patients have pleasurable experiences in the eating of nutritious meals in hospitals and institutions? Heseltine also suggests that more might be done in homes for unwed mothers where these women are often having their first babies. In this way we could touch an

important segment of our population and any food practices which are inculcated might be potentially far-reaching. She suggests that this indirect method should be supplemented with direct education.

Sixth, have we fully explored and exploited the teachable moment when a husband and wife are having their first baby? I am inclined to believe from my personal experience that at no time in life is an individual more amenable to nutrition education than when she is having her first baby. Her husband is also vitally interested then. It has been my experience that those who will not listen to explanation of the need for adequate nutrition at this stage are in the real minority. I believe that we can teach nutrition for all members of the family effectively at this time.

Seventh, we have not really attacked the problem of reaching the adolescent or preadolescent with knowledge of the vital importance of good nutrition before and during the reproduction cycle. Often we hear, "They will laugh at it." I have held as serious conversations on this subject with a sixth grade class as any I have ever tried. The boys often lead off in the discussion.

Eighth, we have, I believe, missed the opportunities for interpartum instructions. We try to influence a woman whom we see too late during her pregnancy. We do not approach her until she is pregnant again. This education in nutrition must be continuous.

Now I have taken so much of my allotted 20 minutes that I shall have to shortchange the periods of infancy and the preschool ages.

We have said nothing about education in diet for lactation. Is this a part of education for feeding infants or should it be done during pregnancy? My own experience would lead me to say both times. In Rochester, Minnesota, I found that no one, neither physician, nurse, nor nutritionist, concerned himself or herself with this problem. Once a week when I gathered together in the hospital the group of mothers who had decided to breast feed to talk about diet for lactation, I found that this is another golden moment. It is my opinion that this moment must not be missed. These discussions can affect the practices of feeding all members of a family and food habits for the next pregnancy.

Infancy

We need to be far more realistic than we have been about delineating the advantages of breast feeding. Can we make sense of the psychological and nutritive advantages of breast feeding so that more women will be encouraged to breast feed but those who either cannot or do not want to because of physical or emotional reasons are not made to feel guilty?

I am going to stress only one more thing for the period of infancy. Feeding during this period is currently not always based on a thorough understanding and use of the knowledge of the developmental processes of growth. We do have the research on nutritional status, the nutritive needs of infants and the knowledge of the growth process to assist mothers to understand the process of how a child learns to eat. At the time of emerging independence in eating, the child has physical as well as emotional reasons to cut back on his food intake. Mothers are helped by being told reasons to cut back on his food intake. Mothers are helped by being told of this developmental process. We need to teach more and better the developmental patterns of growth in infancy than we have ever begun to do.

Again this means, I believe, more and better courses in human development and child psychology in medical schools, schools of nursing, and in training programs for the nutritionist and dietitian. Then the next step is how to get this information out to the public.

There are notable efforts to increase these types of understanding in the last revision of "Infant Care" (18) and in the "Manual on Health Supervision of Young Children"--a guide for practicing physicians and Child Health Conference personnel (19) which was put out by the Committee on Child Health of the American Public Health Association in 1955.

Do we need also to explore the team approach to teaching in the well-child conference?

All of the points of emphasis of need for nutrition education which were covered under pregnancy are pertinent here also.

Preschool

The notable advances during the past decade in understanding the child need to be correlated with our current knowledge of the nutritive needs of the preschool child.

At times it would seem that because we are spotlighting the emotional needs of the growing young child we are tending "to throw nutritional knowledge out the window." For instance, Dr. Amy Daniels advocated during the 1930's giving a child the bottle until even 4 years of age as a method of assuring the drinking of enough milk. She was wise concerning the nutritive needs of the preschool child, but she was also beyond her time in understanding the child's way of eating.

Can we in nutrition education for the preschool child turn our sights on understanding the child without for one moment losing sight of what we know about his nutritive needs? We must exploit even more Lydia Roberts' wise adage that hunger is painful for a child and that food brings satisfaction and pleasure. The breaking of this sequence is basic to all feeding problems in young children. We need further study on the points where we have weaknesses and strengths.

We have also tended to try to separate feeding problems from all others. Katherine Bain points this out as a need for programs for children. She says, "It is now well accepted that children grow physically, according to certain patterns, passing through the same stages at different rates. It is also accepted that each individual has his own unique pattern and rate. That social and emotional growth takes place in a similar way--following a general pattern but with individualization--that is much less well accepted. For many years educators have been talking about the whole child, yet much research relating to children fails to recognize the interrelatedness of growth in all of its manifestations."

We need to correlate our efforts so that all members of the teaching team understand and use this concept fully.

In closing, may I quote from an article by Dr. Martha Eliot (20) in "Strategy for Children." With the optimum development, physical, mental, and spiritual, of all children as a goal, she suggests 5 basic tasks. They are:

1. Building parental knowledge.
2. Strengthening family capacity to provide emotional and social security.
3. Preventing ill health and family breakdown.
4. Expanding the corps of workers for children.
5. Increasing the pace and amount of research in life sciences, particularly as they relate to the development of healthy personalities and to effective ways of promoting it.

There are many points to be considered in these by those who are interested in nutrition education.

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Elementary school level

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Let us recognize that, up to this age, the most dominant direct influence on children's eating habits has been their parents. Now the school enters the picture. Let us recognize, also, that once diet patterns have been fixed, they tend to last a long time.

For purposes of clarification, nutrition education at the elementary school level is defined as aiming to produce, through teaching, good food habits of children at this age level. It is understood that the school's influence is only one influence on the habit-formation of children, but it can be a very significant influence, particularly if home and school are working cooperatively toward common goals. We recall Dr. Roberts' well-known causes of malnutrition: ignorance, indifference, and poverty.

The number one problem in nutrition education at all levels is that too little is established concerning effective methods of teaching for change in food habits, and one cause of this, we must hasten to acknowledge, is that very little has been and even less is being done about it. An examination of the sources reporting such studies supports this statement.

The number one strength in the problem of nutrition education of children is that they, like adults, like to eat! We do not have to bring forces or influences to bear to create this interest--it is there, and it is there every day, not just once in a while. With the widespread development of the school lunch program in the last 15 years, children now eat at school where the school can provide a laboratory for teaching good food habits.

The number one weakness in this whole matter of nutrition education is the lack of "know-how" on the part of those who are attempting to educate or teach--the teachers. I hasten to point out that we do not have a lack of interest here, but certainly a lack of training in both sound knowledge and effective methods. Semrow's survey on nutrition education (Journal of Home Economics, Nov. 1956) revealed that goals were far ahead of current ability to affect desired changes in food habits.

A constant reference to the clusters of principles of learning is in order as we consider some pivots around which sound programs in nutrition education can be built. These principles of learning apply whether we are planning a communitywide program of nutrition education as in the Kansas City project, or whether we are teaching one child or a group of children.

The learner learns more effectively if both the process and the results are satisfying; results are satisfying if fundamental human needs are met--needs for approval or acceptance, needs for conformity or a sense of belonging, needs for achievement, recognition, etc. Children get satisfaction out of pleasing their teacher, their peers, and young children still even like to please their parents!

The most important single bit of knowledge concerning nutrition which young children need to acquire is that food aids growth. The child is "ready" to learn this. Keep the concepts simple, but sound. Telling is not necessarily believing or practicing. Teaching a child to spell "honest" does not cause him to be honest! Directed observation of fast-growing animals and plants can convince a child that food does aid growth. It is well to demonstrate also that other factors besides food are necessary for normal growth if a

balanced concept of health factors is to be acquired, also the concept that different species use different sources and types of food should be made clear.

The learner learns more easily if he does not experience conflicts in the influences which are operating on him. In other words, when parents and teachers are working together, the child receives stimulation all in the same direction and he is less likely to experience doubt, confusion, or discouragement. This implies the need for teachers to know family backgrounds of pupils, and for provision for the teacher and the parent to explore mutual understandings. We need not only teacher-pupil planning, but teacher-pupil-parent planning. In cases where parent support is not or cannot be relied upon, certainly community and other agencies need to be mobilized for the good of the child. Assuming an acceptable school lunch program, the child still gets about twice as much of his food away from school, usually in the home, as he does at school.

The learner learns more effectively if his concepts follow a logical sequence. By "logical" is meant from the very simple, gradually to the more complex.

Knowing that food aids growth is a primary concept that must be established before a more complicated concept is attempted--the concept that different foods do different things for us, and that some of them (such as milk) are practically indispensable. Animal experiments of a very elementary nature can demonstrate these facts to the stage of acceptance on the part of children. A weaned white rat on jelly sandwiches and other snack diets including bottled drinks and tea and coffee while a litter mate is eating "some of everything" including milk will show in 2 weeks that there is a difference in size, and this was the goal which should be emphasized until every child in the building sees for himself that this is the case and associates good growth with the meals that include a variety of foods. Eating a variety of foods, then, becomes the goal from first grade up.

Goal for the pupil: A variety of foods, so that he will grow.

Goal for the teacher: Habit formation for lasting effects.

The learner learns more effectively if he knows "where he is" with respect to a goal. The child needs to be involved himself in this process. In nutrition education, the goal which the parent or the teacher has is not necessarily the same as the one the child has. The adults are working for good nutrition; the child's goal is to grow big; if he believes (because of his concepts) that food aids growth, he is ready to use this knowledge in a practice toward the desired goal, growth. Children need to become familiar with and use reliable sources of information as criteria in forming judgments.

Frequent appraisal of progress toward achieving a goal is a fundamental step in good methodology, and self-appraisal is better than teacher-appraisal.

Whether the "variety of foods" is presented in groupings such as in the Basic 7, the broader grouping of 4 as in the new bulletin, "Essentials of An Adequate Diet," or some other arrangement is not really important in achieving the goal.

Sound nutrition information, like sound sex information, should answer the child's developing needs for explanations as he requests it and it should be presented in terms he can comprehend. And, as in sex information, he should not be given an overdose at any one time. Nutrition information needs to be integrated with expanding learnings in all areas but, because of the closeness to daily living, emphasis on good eating habits can occur at any time in natural daily experiences.

Constructive steps in strengthening the ability of teachers to effect changes in food habits of children must reach two groups of teachers--those already in service and those yet to be trained. Including in the college curricula for elementary teachers and health and physical education teachers some training in nutrition and in nutrition education is part of the answer. It could be incorporated into some of the presently required semester

hours in Health and Physical Education without adding extra hours to the requirements for graduation. For teachers in service, workshops, short courses, conferences, summer courses could help fill the gaps in their training.

The significance and importance of an experience is often dulled by day to day repetition or contact. Many people honestly believe that familiarity with an experience, such as eating, makes them an authority on the subject. Thus many well-meaning and perhaps otherwise well-trained elementary teachers do not realize that they are not equipped with reliable nutrition information, and their concern is often only with how to teach nutrition.

It only takes a few fundamental concepts of basic nutrition knowledge for a child to have the needed guides to good eating habits--remember he already has natural incentives to eat well. Such concepts expressed in the words of children are:

"Food makes us grow."

"We can learn from a rat!"

"The plant that got light is larger than the one we covered with the box."

"It is better to eat a little bit of a lot of foods than a lot of a few foods."

For one who knows both children and nutrition, there is no more rewarding undertaking than to work with a group of elementary school-age children in nutrition education. Their ready-made interest in food is natural and continuous; their eagerness to experiment and to look for outcomes on which to base conclusion is stimulating; their zeal in applying themselves to attain goals they have set for themselves is a lesson to each of us; their willingness to "play the game," to participate in a group project, to hold themselves to high standards, to rejoice over progress demonstrates the true process of education: a learner, learning with the help of a teacher, teaching.

Teen-agers

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The most challenging frontier in nutrition today is in the area of education. We have a relative abundance of knowledge about foods and nutrients and their utilization by the body but we know little about how to change people's food habits. Application lags, and in consequence people are not enjoying the higher level of living which good nutrition promises. Moreover, prevention is recognized as the best way of combating such conditions as obesity, coronary disease, and dental caries. The main bulwark of prevention lies in education.

In nutrition education, the matter of attitudes is probably as important as the facts about diets, especially for the teen-agers with their newly acquired independence and their preoccupation with their intense living of the moment.

The sound case for good nutrition usually rests on health, long-time benefits, or even the improvement of the next generation. How can the educator translate these into terms meaningful to the teen-ager? Because of the resistance of the health of growing children to insult and injury, the ravages of malnutrition, which for most of our children is fairly mild, may pass unnoticed. The boy of 15 has little concern for the man of 50. Evidence of effects of poor nutrition in the years to come is not of great interest to children. Their attention and interest are not directed toward having healthier children, living long, and delaying the onset of old age.

Attitudes toward health are not all that could be desired, especially those of teen-agers. They often take it for granted. Like many adults, they may think it is "smart" to defy the laws of health. For some of the girls the word "health" may have undesirable connotations, as being buxom or large. Gang influences are often more important than those of parents or teachers, and parents too often do not practice what they preach. Health classes are notably dull.

Dr. Leverton has said, "Never have children needed food guidance as they do in our present complicated food world." According to nationwide studies in the past few years, teen-agers stand first on the list of the children who need this guidance. For example, the proportion of Iowa children, boys and girls, with average daily diets which met 100 percent of all the Recommended Allowances decreases sharply with age. Concurrently the percentage with diets in the lowest classification increases sharply from the youngest to the oldest age groups.

There is certainly no more dramatic evidence than this of our need for effective nutrition education throughout the school years and of our present failure to provide functional nutrition education as children advance from the early grades through high school. Teen-agers offer fertile soil for nutrition education if we only recognize it and make the most of the natural advantages for learning afforded by them. In this stage children have inquiring minds, tremendous drives, a great urge for personal independence, and many opportunities to make choices and decisions for themselves.

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[1]Prepared with the assistance of Harriett Roberts, Assistant Professor, Food and Nutrition Department, Iowa State College, and Richard Trump, Instructor, Ames High School.

The teenage comprises most of the second decade, which may indeed be the most eventful of the life span. Each different stage offers an opportunity to teach the importance of nutrition and the changing needs with changing physiological conditions. This, according to Will Durant, is one of the most important lessons of life. In about 1936 he made the following statement in the Saturday Evening Post:

> Since the strongest root of happiness is health, I should like to see children abundantly instructed in the knowledge and care of their bodies. . . . I should make education in health a required course in every year of schooling from kindergarten to Ph. D. I should want my children to learn as much about the structure and functioning, the care and healing, of their bodies, as can be taught in an hour a day for 15 scholastic years. . . . And if the day should come when our dietitians will have at last made up their minds as to what they really know and believe, I should ask them to teach the principles of diet an hour in every school week for 15 years, so that our people might make with some corporate intelligence the dietetic changes required by the passage from an outdoor and physical life to a mental and sedentary one. I would teach health and cleanliness first of all, and expect that all things else would be added unto them.

The spectacular differences in growth rates and body size during the teens afford an ideal situation for teaching the relationship of nutrition to body size and changes. One of our responsibilities as nutrition educators is to help children understand the spurts in growth that come in the period of adolescence, and to show them that their nutritional needs are strongly influenced by the changes they are undergoing and that they grow in other ways than in height and weight. As Gerard has shown in "Food for Life," the body is like a house. The finished structure bears little resemblance to the original materials that went into it, but we may add that it can be no better than the building materials.

The Nutrition of the Teen-agers

Nutritionally speaking, teen-agers are generally considered to be in a deplorable state. The teen-agers are "starving" as well as "delinquent," so we are told many times over. Evidence from numerous studies shows that the diets of the U. S. teen-agers do not conform to standards, but we must not overlook the fact that there is some question about the validity of the standards and that the methods for studying diet and nutrition are not infallible. As a part of the nutrition education in the Ames High School Biology class, the students read and criticize the highly publicized article about "The Starving Teen-agers." These students regard it as severe. I am inclined to agree, though we all know that nutrition is a serious problem in these years. Moreover, teen-agers constitute a large class of people; they are a heterogeneous group, and it is probably not fair to dump them all in one basket. For example, there is a difference between the adequacy of the diets of boys and girls. Boys have large appetites, eat a good deal of food, and, probably more by chance than by planning, have diets which, on the average at least in Iowa, do not fall far short of the Recommended Allowances. For reasons not entirely clear to us, teen-age girls tend to reduce their food intake as they grow older, beginning at age 12. The nutritive quality of the diet suffers in many respects. The intakes of calcium and of iron are low as compared with standards; and many do not have enough of these substances.

The heavy teen-age girls have especially poor diets. They seem to be laboring under the delusion that certain foods, notably milk, are fattening. Actually, however, we find fewer heavy teen-age girls among those with excellent diets (though liberal in calories) than among those with poor, low-calorie diets, and fewer among those who have three or more cups of milk daily than those using two or fewer cups of milk daily.

For both boys and girls food at breakfasts and snacks is the most poorly chosen. With the teen-age girls, as the calories at breakfasts decrease, the calories from snacks increase. Snacks generally are less nutritious than breakfasts.

For children of all ages, included in the Iowa study, the percentage distribution of calories among proteins, fats, and carbohydrates is 12, 42, and 46, respectively. The proportion of calories from fat is almost identical with that in our national food supply, which is considered by many as dangerously high. Although the best level of fat in the diet at any age is not known, there is good evidence that the present consumption may in the long run be deleterious to health. An effort to help children to use fat more moderately seems like a wise precaution against future ills. For both boys and girls, the diets of highest nutritive value contained more milk, fruits, and vegetables than those of the lowest, with the diets of intermediate rating in between. It therefore seems that continued emphasis on the liberal use of these foods is important to the attainment of a liberal diet. Unless vitamin D milk is used, the daily supply of this nutrient is probably inadequate since few adolescents take vitamin supplements.

Although it is important to know the vulnerable spots, nutrition education of children of any age should not be a "troubleshooting" affair, planned only to solve the immediate problem. Nutrition education should aim at helping children to acquire an overall view of nutrition and its importance to their longtime health. It should aim at establishing some underlying philosophies and attitudes toward food which will serve them throughout life. Teen-agers should learn to appreciate and like a variety of foods. The high school biology teacher said he often concluded his 2-week unit on nutrition, with sophomores, by asking them if they could adopt only one rule in eating, what would it be? Interestingly enough, the one he tends to rate highest is "Eat a variety of foods."

The Diffusion Process

By the time a child has reached the teen ages he has usually formed many food habits. Nutrition educators then face the problem of changing the old practices and obtaining the adoption of new practices. Examples are the substitution of milk for carbonated beverages, eating breakfast regularly, or selecting nutritious foods for snacks. In the realm of food we know little about how these processes can be accomplished. However, a committee of rural sociologists of the North Central Region has recently arrived at an analysis of the problem which seems applicable to so many situations that we can scarcely doubt that it would be useful to us also. The process is spoken of as "Diffusion" by Drs. George Beal and Joe Bohlen. The specific stages were defined after the cooperative study of 35 researches conducted over the past 20 years. Unfortunately none of the projects related to nutrition or to the teen-agers, but there seems little doubt that the procedure is applicable and that the results would follow in the general pattern which has been observed.

The five stages as applied to the acceptance by the farmer of a new practice are: The awareness stage, the interest stage, the evaluation stage, the trial stage, and the adoption stage.

In the awareness stage the individual knows little about the new idea beyond the fact that it exists.

In the interest stage he wants more information about the idea. He wants to know what it is, how it works, and what its potentialities are. He is beginning to wonder what it could do for him.

In the evaluation stage the individual makes mental trial of the idea. He applies the information obtained in the previous stage to his own situation. He asks himself, "Can I do it, and if I do it will it be better than what I am doing now?"

If he decides the idea has possibilities for him, he will try it. The trial stage, according to Drs. Beal and Bohlen, is characterized by small-scale experimental use, and by the need for specific information which deals with: "How do I do it; how much do I use; when do I do it; how can I make it work best for me?"

The adoption stage involves large-scale, continued use of the idea, and most of all, satisfaction with the idea.

With nutrition the satisfactions are difficult to pinpoint, since many are intangible and only evident on a longtime basis. If we could only show more definitely the relationships of health in later years to present practices, one of the hurdles would be accomplished.

The application of nutrition information to the various steps of the diffusion process is not easy, and requires more than knowledge of the subject. It demands a knowledge of the values and satisfactions of people and how nutrition is related to them.

Generalizations in Nutrition

If we accept the steps in the "Diffusion Process" as a logical sequence the next task is to orient the nutrition information accordingly. Unfortunately most of our nutrition information is not assembled with this vital approach to education in mind. Most sources of nutrition education are geared chiefly to creating "an awareness." For example, the nutrition section of the teen-ager's biology text is likely to follow the traditional plan of discussing calories, vitamins, and minerals in logical sequence, with little application to the interests of the child. The high school biology teacher said that one of his greatest needs was for suitable supplementary material. We need more materials like Dr. Leverton's "A Girl and Her Figure," or "Food Becomes You."

The nutrition scientist and the nutrition educator, who are seldom one person, need to combine forces to bridge the gap between the technical knowledge and how to relate it to the needs and interests of individuals.

We have made an effort to help solve this problem at the Iowa State College. It was initiated by Dr. Helen Barbour under the guidance of Dr. Mattie Pattison and me, and with the cooperation of other members of the nutrition staff.

The first step was to assemble information about the values that people hold as important and how they think these values can be attained. This led to a framework into which nutrition information, in the form of statements called generalizations, was placed. As everyone knows, one of the most difficult tasks is to take the scientific information and interpret it in this fashion, so that it will be accurate, not misleading, and can be modified with new information.

Criteria used in selecting and formulating the statements were:

1. Proof through reliable experimental evidence, derived under carefully controlled experiments and subsequently reaffirmed by other investigators.

2. Practical working hypotheses advanced by experienced research workers in nutrition.

3. Logical conclusions from knowledge in nutrition and related fields.

4. Scientific observations of populations and of species survival.

A few of the major generalizations which are expanded by substatements are:

1. Nutrition can affect how you look by its influence on the different parts of your body and the characteristics which relate to your personal appearance.

2. Nutrition can affect your personality, vigor, and ambition.

3. Nutrition can affect how you work by its influence on your physical and mental efficiency.

4. Nutrition can affect how you grow and develop through its interplay with hereditary influences, environmental conditions, and other factors related to the chemistry of the body.

5. Good nutrition requires that the nutrients, or chemical substances, needed by the body for its functions be provided in ample amounts.

The supporting statements, or the working basis, of each generalization were obtained after a critical sifting and screening of the literature related to that subject.

An example of the supporting statements of the first generalization on nutrition and appearance, related to the skin, were as follows:

Good nutrition forms an important link in the chain of conditions necessary to produce an attractive skin.

1. The skin of a well-nourished person is usually smooth, slightly moist, and tinged with pink; that of a poorly nourished person is likely to be dull and lifeless.
2. Inadequate amounts of vitamin A in the diet for long periods of time result in dry, scaly skin which is more susceptible to infection than normal skin.
3. Too little of certain members of the vitamin B-complex in the food supply may result in scaly, greasy, or crusty skin around the corners of the mouth and in the folds of the nose.
4. When food has contained too little protein, minerals, and vitamins, the red blood cells do not have a normal amount of their red coloring matter and the skin of the individual may be pale in color.
5. For some people common foods, such as milk, egg, strawberries, or wheat bread, may cause a skin rash known as allergy, and it becomes necessary to eliminate the offending foods or to become desensitized to them.
6. Although the acne of adolescence may be unrelated to nutrition, a good all-around diet will help to maintain a healthy condition of the skin and, together with cleanliness, may help to combat it.

These represent statements which could be used with confidence in teaching girls about the relation of nutrition to the condition of their skin, one of several factors important to their appearance. Similar statements were developed for the teeth, eyes, hair and nails, body size, posture, and the "glow of good health." Great care was exercised not to build up false expectations.

Dr. Barbour applied the generalizations in teaching nutrition to students in fifth grade, junior high school, and college freshman classes. Her ultimate goal was to lead the students by any one of many methods to an understanding of the generalizations and to the point that they would use the generalizations in making their choices and decisions about food. Evidence was obtained that the generalizations were useful, even on the fifth grade level. The generalizations are not to replace the basic subject matter in nutrition but to help in its application. They can be used to implement any one of the steps in the "Diffusion Process."

In relating nutrition to the values people hold high, great care must be exercised that they understand the complexity of these values and the ways of attaining them. Openmindedness toward new knowledge and the need for modifying old ideas are inherent needs in nutrition education. The teen-ager has reached a mental awakening which makes him ready to grasp such concepts. The interrelatedness of nutrition to hereditary and environmental factors, if not understood, can be appreciated. Nutrition should not be oversold, but neither should people be deprived of its advantages until the last intricate fact has been proved.

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Projects and Devices

Comparison of healthy, well-nourished young people with the poorly nourished ones affords an impressive way of making students understand and appreciate the differences between good and poor nutrition. But here again, it is probably necessary to point out that nutrition seldom operates as a single isolated factor but in a framework of complex conditions all of which contribute to the end result. It would be nice to know the effects of nutrition as an isolated factor, but nutrition does not operate that way.

Nutrition projects which capitalize on the energy and enthusiasm of youth may be very successful. Many people consider it difficult to interest teen-agers in nutrition. There is much competition for their time and attention, and some workers have reported that by this age youngsters have the idea that they know all about nutrition. Some teen-agers, as do adults, regard their food as a personal matter, and efforts to find out about it an intrusion on their privacy.

The ability to make nutrition interesting to teen-agers has been well demonstrated by Miss Harriett Roberts, Extension Nutritionist with the 4-H program. In at least seven counties in Iowa she has promoted vigorous "Better Breakfast Programs." These usually started with a survey which brought to light some facts for that community. In several instances the projects were carried on cooperatively with the schools and with 4-H leaders among the boys, and of course the county home economist. Usually they involved exhibits and demonstrations in public places, and maybe a "kickoff-breakfast" to which people in the community were invited.

One "campaign" involved about 9,000 children in Boone and Dallas counties. Survey information was very useful in arousing interest. It included a distribution of the children according to breakfast ratings, the differences between boys and girls in regard to the adequacy of their breakfasts, comparison of rural and urban children, and reasons why children did not eat breakfasts.

Evaluation of the results of such campaigns is an important step. In the Kossuth County Better Breakfast Programs, a follow-up survey was made later. The following are data for 3 girls' clubs:

	Average Score[2]	
Club	First record	Second record
I	3.4	4.1
II	2.4	3.0
III	3.6	4.3

The slight improvements were due chiefly to the greater use of milk and of fruits other than citrus fruits as shown:

	Percent of girls	
Food appearing on breakfast menu	First record	Second record
Citrus fruit	29	27
Other fruit	9	20
Milk	40	51
Egg or other protein food	40	42

The results, though not dramatic, were encouraging and perhaps of the kind we must expect in the process of changing a food practice.

Evaluation in general is a neglected area in nutrition, especially as it regards the final checkup on whether or not new practices were actually adopted.

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[2] Rating scale: 0-7. Sidwell, V.D. FS 497-Iowa Children Need Better Breakfasts. Iowa Farm Science. June 1953, pp. 12-13.

More recently Miss Roberts and her coworkers in extension have developed a unique breakfast scoreboard, which has been used in many places in Iowa. On one panel are the foods which are likely to be included in the breakfast menu. The person has only to punch the switch for each food eaten. With each punch an illuminated score appears on the board. If these add up to 100 you depart with a tag which you may proudly wear as you mingle in the crowd and look at the other exhibits. The tag is a good conversation piece.

Adjacent to the score board was an interesting exhibit of foods as sources of vitamin C. This was well chosen for several reasons: it is attractive and dramatic. The equivalents in vitamin C of such foods as tomato juice and grapefruit juice make an arresting display. The exhibit does more than stimulate an awareness. An estimated 17,000 people in Iowa checked their breakfasts by the device this year at the "Caravan" which traveled the state under the auspices of the Extension Service.

An equally effective approach could be made to the subject of snacks and I am hoping that Miss Roberts will tackle that problem soon.

An all-important need of the teen-agers is to learn to evaluate meals, separately and together in the total day's food supply. By successfully learning this lesson the foundation of health in later years will be laid. The noonday meal, whether eaten at school or elsewhere, affords a good starting point. Much has been said about using the school lunch in an educational way, but not enough has been done. Suggestions on how to make it serve educational purposes are needed. Perhaps one of our working groups can give us a Type A plan for the educational aspects of the school lunch program to accompany the very successful Type A plan for the menus.

Need for Integrated Efforts with Planned Approach

For the teen-age group nutrition education is left to chance. There is no systematic approach or organized channel by which we can be certain that all teen-agers are reached. Nutrition is taught to some extent in science, biology, health, and home economics, but many students may not be enrolled in these courses. The 4-H program is effective for those who are reached, but many do not enjoy its benefits. Actually we have little notion of the proportion of teen-agers who have some nutrition education.

On the other hand, some encounter it over and over again. The biology teacher reported that many students think they know all they need to know about the subject. For these he is ready with a good question which soon shows that they have much of interest to learn. How many teachers are this alert, interested, and prepared to meet the situation?

Home economics teachers say, too, that the children are tired of the "Basic Seven" by the time they reach high school. We recognize that bombardment by advertising is effective. But there we have a few well-chosen words attached to an emotion-packed situation. Most of our teaching does not have the subtle quality of advertising. How to pull the threads together and develop an effective program which will reach all teen-agers poses a key question. Who shall take the leadership and who has the first responsibility for the nutrition education of the teen-agers? This is one of the questions which I think could be most profitably discussed at this conference, so far as this age group is concerned.

Summary

Surveys have shown certain dietary problems among the teen-agers. The correction of these is important but even more important is the establishment of good food habits and attitudes toward eating which will serve the individual throughout his life. To be successful in our nutrition education of the teen-ager it will be necessary to weld our scientific information in nutrition firmly with the knowledge of how to apply it so that it will function from the "awareness" to the "adoption" stage, and finally to determine who shall take the responsibility or leadership for an integrated program which will utilize fully the many channels and opportunities available.

Adults

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One cannot begin a discussion of the nutrition education problems of adults without reaffirming a basic belief that concern with nutrition is a lifetime proposition and cannot actually be segmented into compartments according to age. What precedes affects what follows, and while the emphasis may vary at each period there is a continuity and an interdependency of concern. It is an endless cycle--the infant of today being the adult and parent of tomorrow--the problems of later years often having their onset in earlier years and we being what we are because of our yesterdays.

We might begin by asking who are these adults for whom we are planning programs and what do we know about what is happening to them! In 1950, it was estimated that about two-thirds of our U. S. population were 21 years of age and over. It might be helpful to look first at some of the dietary, physical, sociological, educational, and economic characteristics of these adults, all of which may have effects upon our programs.

Facts About Adults

Dietary

Evidence indicates that many adults, young and old, still seem to be consuming certain nutrients in amounts believed to be insufficient to support best health. In a recent study by Batchelder (1) it was found that women 30 to 90 years of age, representing a cross section geographically, ate on the average during a 24-hour period far less calcium than National Research Council allowances and reported low intakes of milk as well as low levels of intake of ascorbic acid. Dean (2) reported in a study of women industrial workers that intakes of calcium and iron more frequently fell below NRC allowances than did other nutrients, but in addition younger women's intakes of vitamin A and ascorbic acid were usually less than recommended.

As one reviews the literature, it appears that the nutrients most likely to be short in many adult diets are calcium and ascorbic acid. Since the NRC allowances are often used as the standard of comparison in many studies, it is well to remember that these were intended to indicate levels of nutrients which appear to be desirable goals toward which to strive in planning diets and food supplies. There are limitations in applying average yardsticks of nutritional adequacy when considering the individual, and not all who fail to reach these goals are malnourished.

According to one report (3), the daily energy value in calories from the annual per capita quantity of food available for consumption by civilians since 1935-39 has declined slightly. In 1955, a larger proportion of available calories came from fat and a lesser number from carbohydrate as compared with 1935. Percentagewise the dietary fat from meat, poultry, fish, and eggs has increased and that from fats and oils has decreased. Family food consumption surveys seem to verify these changes.

Physical

1. There has been an increase in life expectancy which has resulted in a greater number of older people. According to Dublin (4), there are approximately 13 million people in the U. S. who are 65 years of age and over.

2. With improvements in medical care, sanitation, and availability of immunization, we have had a decrease in communicable disease.

3. There has been an increase in chronic illness with its concomitant effects socially and economically upon the individual and his family and, more particularly for us, with its implications for guidance as to the role of diet in prevention, treatment, and rehabilitation.

4. Somewhat related to the above three points, ill persons are hospitalized for shorter periods of time and we have an increase in home care programs and in institutions such as nursing homes.

Sociological

1. Adults are living in smaller houses with less storage space and fewer generations under one roof--this may affect food purchasing practices, and the "handing down" of information or sharing of experiences between generations.

2. There has been an increase in activities outside of the home resulting in such things as more "pickup" meals and informal entertaining.

3. Family members seem to change roles more frequently--the fathers cooking and mothers doing more repair jobs around the house.

4. People marry younger, with 1 out of 3 girls married by age 20--and thousands of women confronted with a prospect of 8 to 9 years of widowhood.

5. Our population is a mobile one. Welinsky (5) says the average worker in an era of prosperity may be expected to change his residence about 8 times during his working life, with 2 or 3 of the moves involving a change of community. As a result we have individuals exposed to varied kinds of food and meal patterns, to a variety of levels of community services, and we can no longer say that our neighbor's nutrition is not our business.

6. A wide range of new food products is available. Many foods now have "built-in maid service" and individuals are faced with the problem of wise selection, nutritionally and economically, in terms of both time and money.

7. Mass media are being used more and more, and individuals are exposed to a verbal and visual "barrage" of nutrition information with varying degrees of reliability. It has been said that one of our major problems is concerned with protecting people from the claims of food faddists, drug houses, and supplementary food companies.

Economic

According to Dublin (4), three-fourths of the families in the nation had incomes of less than $4,500 in 1949 and one-fifth of all families made less than $1,500 per year.

Limited amounts of money for food are still a problem with many families regardless of the rise in income levels over the country. A limited food budget does not necessarily result from a low income since a family may have what is considered to be a high income but because of other pressures on the budget may have a limited amount of money available for food.

Educational

The level of educational attainment is increasing and younger adults have had more years of formal schooling. This has tremendous implications for the kinds and amounts of nutrition education we do, where we do it, and the types of preparation we need as professional people in order to do it.

Young and coworkers (6), in a study of what homemakers in approximately 650 households know about nutrition, reported that nutrition knowledge was greatest in the younger, better educated, higher income homemaker. Of all of the factors studied, education seemed the most important single factor related to the knowledge of nutrition. The majority of homemakers reported school as the place where they studied about what to eat. The greatest need seemed to be for more knowledge by homemakers in terms of the need to serve certain foods and in understanding the reason for inclusion of the following: (1) the ascorbic acid-rich fruits and vegetables, (2) the carotene-rich fruits and vegetables, (3) bread and cereals, (4) butter or fortified margarine, and (5) the use of milk by adults. The kinds of help most desired were related to information on variety in food preparation, budgeting, quick menus, food habits, and special diets.

Thus for a brief description of these adults with whom we are concerned. Now a look at what we have been doing for and with them in our nutrition education programs. Since it is impossible to include all aspects I shall confine my discussion to four types of nutrition education activities concerned with adults which seem to receive a fairly high priority in present day programs--namely, Professional Education for Allied Workers, Direct Services to Lay Individuals, Consultation to Institutions, and Research. While my major interest and experience is in public health nutrition and I shall probably reflect happenings in this area to a greater extent, I have attempted to be as broad and inclusive as possible.

Nutrition Education Activities for Adults

As nutritionists, we are largely concerned with helping people to help themselves, and this task is often more difficult than giving help directly. Many of our efforts are concerned with helping other professional people do a better job with the patient, the student, or the parent.

We often serve as the "middleman," translating the findings of the laboratory and helping others to apply them--always remembering that the individual still has to make the decision, apply what we give him, and modify his own behavior.

Professional Education for Allied Workers

Since we rely on other professional personnel to help us carry our message and extend our services, we have a responsibility in providing them with sound basic education in nutrition as well as helping them keep up to date. Professional education can be divided into preservice training--that which is given to help qualify for a position, and inservice training--that which is provided on the job.

Consistency in what we teach is important since conflicting messages to the laity only serve to confuse while uniformity and repetition enhance and reinforce our efforts. In attempting to provide for this, we have provided consultation to schools of medicine, dentistry, nursing, education, and home economics and worked with faculty members on the nutrition component of the curriculum. Assistance has been given not only with nutrition content but also with finding qualified personnel to teach nutrition, providing field experience and observation in community nutrition, and preparing and providing teaching materials.

Since nutrition is an ever-changing science, inservice training is essential. This has been provided through the medium of staff education, teaching days, workshops, newsletters, as well as group and individual case conferences.

In reviewing activities in the area of professional education, there appear to be several problems:

1. A lack of knowledge and exchange between the nutrition educator concerned with preservice education and the one concerned with inservice education. More exchange as to what was included in the student's basic preparation, how well the student applies what she has learned, and what current problems and needs are as observed in the field would make a richer, more effective and rewarding program--with the preservice curriculum built upon current, actual problems and meeting the needs and interests of students and communities, and the inservice training supplementing, enriching, and fortifying the basic preparation.

2. Wide variation exists between the amounts and kinds of nutrition education provided for the various groups of professional personnel. Perhaps this is related to the fact that some of the professions such as nursing actually require a certain number of nutrition courses, while in other instances nutrition is an elective. Consideration should be given to the apparent need for either more or improved training in practical everyday application of nutrition knowledge for physicians, social caseworkers, and school teachers--all of whom can contribute a great deal to an effective community nutrition program in everyday work.

To achieve success in professional education for allied workers, the nutritionist herself must be well trained and alert to possibilities for further development of her services.

Direct Services to Lay Individuals

This is related to the increase in chronic diseases, shorter hospital stays, and advances in medicine with the resulting need for direct guidance to the patient concerning the role of nutrition and diet in prevention, treatment, and rehabilitation. Included here are services such as group classes for the overweight individual and the diabetic, nutrition consultation in out-patient clinics, and a community counseling nutrition service.

Reports of work with groups of individuals with a common problem such as diabetes indicate that some of the following factors were related to successful groups: (1) Physician referral and support were available, (2) classes were cooperatively planned and taught by well-trained people, (3) adequate time was allowed for instructor to listen and patients to discuss, (4) nutrition was interwoven and correlated with other aspects of care.

More needs to be done in providing group classes at various times of the day and evening, making it possible to reach more of the people (especially men) who have problems and would accept nutrition assistance.

Improved publicity of such classes might also result in an increased number of referrals from physicians, and it might be possible to use group methods more with other groups such as individuals on a restricted sodium diet.

In a pilot study of a nutrition counseling service for patients in a community offered through a local health department, Meredith (7) reported that of a total of 94 general practitioners and specialists in diabetes and cardiovascular disease, 36 percent utilized the service while an additional 32 percent had no patients requiring help with therapeutic diets during the period of the study. The majority of patients referred had diabetes and the next largest group needed assistance with diets restricted in calories. The total time required to give help averaged 1-1/2 hours per patient. Of particular interest were some of the following comments by patients on their problems. "When the doctor explained in his office, I thought I understood everything. But when I got home and started to figure out what I was going to eat, I got mixed up." "I didn't know margarine had any fat in it. I thought it was a butter substitute, the way saccharine is a substitute for sugar. The diet list said avoid all fats and oils, but I never realized."

In this entire area of direct service to individuals, one of the more pressing needs is for more adequate and earlier diet instruction of patients prior to hospital discharge as well as referral to other agencies that can provide followup and additional assistance to the patient. In one hospital I visited, the booklet "Meal Planning with Exchange Lists" is given to the diabetic patient soon after admission and she learns how to use it, checking her trays each day.

Adequate instruction in diet cannot be provided unless one knows about previous food patterns, economic status, home conditions, and shopping facilities. To attempt teaching a patient without familiarity with the above is almost a total waste of time. We in public health see only too often the foreign-born, aged diabetic discharged with a diet allowing 2 cups of milk but--never having drunk milk in her life and not understanding its importance--she continues to eat in her usual pattern and thus runs a 3+ or 4+ urine each day.

As Mark Twain said in "Pudd'n Head Wilson"--"Habit is habit and not to be flung out of the window by any man but coaxed downstairs a step at a time." The mere presence of information is of interest only to the extent that the individual is motivated to make use of it. As Larimore (8) commented, health education should be behavior centered and not information centered.

Success requires organization of those services which provide the type of nutrition assistance needed for these individuals and exchange between all concerned so that effort is not duplicated. For example, if we have a patient discharged on a special diet, who receives public assistance and still does not understand her diet, several needs are evident: (1) Need for hospital dietitian to know patient's food habits, home conditions, welfare food allowances in terms of money as well as kinds and quantity of food, so that she can orient her instruction accordingly; (2) need for welfare agency personnel to appreciate the reason for and importance of the special diet so that adequate financial help is provided; and (3) need for referral by the physician and the dietitian to a community health agency so that continued followup and support with the dietary problem can be provided. Joint staff education of hospital, welfare, and health department personnel has proved helpful in facilitating such exchange.

Consultation to Institutions

With the advent of more aged people, more chronic disease, high cost of medical care, and a change in the way in which family members carry out their responsibility toward the aged and infirm, we have witnessed an increase of nursing homes, home care programs, senior citizens centers, and the like. Nutrition educators have been actively engaged in providing consultation to many of those institutions without trained personnel, conducting workshops for nursing home operators, participating in teaching days for institutional staff, conducting research on meal service programs for the homebound, and assisting with the establishment of standards for food service in such institutions.

There is still much to be done since there are many institutions, and available time and personnel are limited. We may need to be more active in working with responsible individuals and agencies on establishing standards for service. Providing consultation earlier in the development of facilities for meal service may decrease problems and the need for assistance later on. Greater use might be made of specially prepared publications and newsletters, thus reaching more of those people responsible for meal service. Professional organizations such as the American Home Economics Association and American Dietetic Association need to be encouraged to expand their explorations of the role of shared dietitian and the use and training of auxiliary food service personnel.

A great potential still exists for the further development of educational programs for our institutionalized population. While problems of food selection, purchasing, and preparation may not be paramount at the moment, the patient came from a home and a community and may return there once again. The fact that in an institution we have a "captive audience" and many teachable moments suggests that more could be done to include nutrition education and provide an ongoing, dynamic program. Some of the activities in this area have included actual classes for tuberculosis patients prior to discharge and for the postpartum patient, as well as the use of visual aids and publications in hospital waiting rooms, libraries, and corridors and on patients' trays.

Research

Various aspects of nutrition research have been underway for a considerable period of time and those of us who are field workers take what others do in research and attempt to apply it. The present trend seems to be for fewer widespread nutrition surveys and more emphasis on the detailed study of causes and cures of specific problems. There seems to be increasing recognition of the need of more thorough clinical study of specific problems in nutrition. We are witnessing an increasing concern of field workers with research materials, methods, and techniques. The concept of the field as a laboratory is emerging and we see "service-oriented" agencies undertaking research programs. No doubt we have missed excellent opportunities for research because we have thought of the laboratory as a room with four walls off in a university, hospital, or other institution. A great need yet exists for a still closer relationship and exchange between the research and field worker since it is possible to strengthen and develop further in this respect. Premature action is unwise, and the field workers' efforts may first need to be directed toward creating an awareness or recognition of a need rather than doing something about it. It is in this area that the research worker can provide tremendous help and support.

With the ease of communication and increase in availability of mass media, the lay public is more frequently aware of the results or reports of nutrition research. Often such reports are poorly timed, the results are not substantiated, and adequate interpretation has not been provided. As nutrition educators we have a great responsibility in this whole area. We need to increase our use of techniques of mass communication to interpret research, provide guidance, and help the laity to separate the wheat from the chaff.

In this presentation an attempt was made to briefly describe "who" these adults are in terms of their dietary, physical, sociological, educational, and economic characteristics--all of which affects what, when, where, and how we plan our nutrition education programs.

Four areas of activities for adults were selected for discussion--Professional Education for Allied Workers, Direct Services for Lay Adults, Consultation to Institutions, and Research. Many other activities have been omitted, although equally important, and even those mentioned were not explored to the fullest.

A century and a half ago, Horace Walpole wrote these lines: "About the time I die, or a little later, the secret will be found of how to live forever." Helen Bevington answered, feeling that enough time had passed to vouchsafe a reply--

Horace, be comforted to die.
One century has meandered by
And half the next since, it was true
The temporal state eluded you.
Now as I read your pensive letter,
I wish myself that times were better
And I might boast how men contrive,
As you foretold, to stay alive.
By now we should possess the key
To fleshly immortality
And, if we wanted to, endeavor
To live forever and forever.
This, to my infinite regret,
Is not a custom with us yet.
I write you, Horace, for good cheer
Life is about as usual here.

We can agree that life is about as usual here in the broad sense, but nutrition services, people, and programs are not static. Changes are occurring and flexibility and adaptation to them are essential for success.

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Comment from the audience: I would like to comment about the school lunch to motivate the adolescents. We have heard or learned that one way to get them to choose what they already know is an adequate lunch might be to cut them in on making the plans. Some of the girls have done that, in some of the States, having the student council elect people. We thought it was a good idea, perhaps, if students would take the matter seriously. The school boards, and we met several, said we have advocated far enough.

Dr. Eppright: As Dr. Fleming said this morning, involve them, and that is a good way to involve. I think that's excellent. I wish to say, too, that we could use our school lunch much more in helping children to evaluate, to recognize a good meal, not only a good meal in itself, but in relation to the two other meals of the day as well. The high school biology teacher enjoys having students evaluate the adequacy of meals. As a matter of fact, he has written an article on it in the magazine "The Biology Teacher." He thinks it is an excellent device.

Comment by same questioner: But the administrators objected strenuously to having the children in on it. They feel we have advocated far enough in self-direction in the school.

Dr. Eppright: That would seem to me to show the need of educating the administrators. I might be wrong about that.

Dr. Tinsley: Certainly the principles of learning that we have heard at various times today apply to supervisors, managers, teachers, administrators the same as they do to children, and certainly through cooperative planning both with parents and students and teaching staff and school lunch staffs, the matter of wise selection can result, and does result in many instances. Participation on the part of students in planning good school lunch menus and having some part in them, and of understanding the problems school lunch people have, makes a lot of difference.

Dr. Eppright: May I say just one word about the school lunch? I have wondered--we have said so much about making the school lunch an educational program--I have wondered just what has been done about it and if we really ever have tried to determine the nutrition lessons that could be taught through the school lunch. I have wondered--this is a flight of fancy, perhaps--why we could not have a Type A educational plan for school lunch purposes just as we have had such a successful Type A plan for serving nutritional purposes. I really think that is a need.

Dr. Leverton: We may have it, but if we do, I don't know about it. I think we would be hearing about it if we had it. We'd be so pleased to talk about it.

(On request from the audience, Dr. Eppright repeats her comment.)

Dr. Eppright: I feel that maybe people by and large need a lot more help on how to make the school lunch an educational experience as well as satisfying our nutritional needs. I made the suggestion that maybe we could have a Type A plan that would help us in education in a similar manner to the way the Type A plan has helped us with nutrition ideas.

Comment from the floor: I think we need to do a little bit more on the school lunch, too, on understanding what the crowd does and to try to work along with the crowd. I had a problem with a boy with very good food habits when he first went to his junior high school and came back and reported that the food was very good. The next week when he got in with the crowd he was calling the food trash because the rest of the crowd was calling it trash. I think too often we are inclined to say that the school lunch is good if it is nutritionally good whether the crowd thinks it's good or not. I think we need to work more with groups in the school. I don't know about involvement, but this is everybody. If the crowd eats food, if the crowd eats breakfast, if the crowd does this, then the individual will do so also.

Dr. Leverton: We are still looking for contributions that you would share with the group. Dr. Lowenberg, do you have anything to give these people about individuals as they get into the second decade of life?

Dr. Lowenberg: I am still a little concerned about avoiding doing anything about anticipating the need for an adequate diet in preparation for the girl who will soon have her first baby. I know that the adolescent is interested in the immediacy, as you said, Dr. Tinsley, but having worked so long with pregnancy I am still concerned can we do something, rather than just saying they are not interested, and I know that too well. We need to try various ideas, I believe. Perhaps we can interest the adolescent girl in this. I am still concerned about the number of girls who are having their first babies while they are still growing.

Dr. Tinsley: I believe one of the reasons I have been personally so interested in nutrition education programs at the elementary age level is that I believe if we take care of good food habit formation during those years we send our boys and girls into adolescence with such a backlog of the results of good nutrition that they don't hurt themselves very badly during those early adolescent years of confusion. Now maybe there is a more constructive way to approach the change of attitudes of adolescents. I throw up my hands when I think of how I would get an adolescent girl to be concerned with her first pregnancy and with her old age. I just don't know how. I do believe we can teach better food habits to youngsters while we have them in elementary school, and then the other sort of takes care of itself. Maybe that's an escapist attitude on my part--I don't know.

Dr. Eppright: I would agree with that--I'm not quarreling with that at all!

Question from the audience: I would like to know to what extent commercial advertising, for example, has influenced good food habits, or the reverse.

Dr. Leverton: I think this is Dr. Tinsley's question again. It has to do with the evaluation of information, doesn't it?

Dr. Tinsley: I believe it does. There is a possibility. I don't believe that I can answer it.

Dr. Leverton: Miss Egan suggests that it is an area that we don't even know. Does anyone have any help for us from the audience?

Comment from the audience on this question: As an instance, take ascorbic acid. They don't put premiums in bags of oranges, but they do put premiums in boxes of cereals, and you build up a great, great premium [demand] for cereals . . . There is a relationship between what is bought and advertising . . .

Another audience comment: Advertising can help us, too. For example, there is nothing, I think, to keep us from using methods of advertisers in matters relating to nutrition. People today are subjected to all sorts of advertising, publicity, and propaganda. We have the so-called thought leaders that are used in influencing the thoughts and actions of the groups and the sales to that group. It seems to me that in the adolescents' groups you work out your plan not with your teaching group but you get your thought leaders such as the football squad or the cheerleaders squad, or the girl who is the prettiest in the class or in the school and have them work out ideas of good school lunches, and that they would be the thought leaders and everybody would follow along, recognizing the needs of the group as much as any adolescents.

Dr. Leverton: Thank you. I think we would agree that it would work.

Comment from the audience: I just want to say, have you noticed that in recent advertising there is more of a trend to promoting foods because of their nutritional contribution to the diet, helping make people even more familiar with nutritional terms, protein, vitamin C, and so forth? Although it may not be any great indication of progress, it is helping in bringing the elements of nutrition to the minds of the people.

Another comment from the audience: I think there is a great need for people who are working in the advertising field to know more about good nutrition, and breaking away from faddism and that sort of thing, particularly those doing editorial work.

Dr. Leverton: This is one of the items for your discussion groups for the day and a half, you will notice, helping to differentiate between the good information and the misinformation. I don't think we have been able to answer your question, sir, about the impact of advertising. I expect that our general answer, or a generalization, comes from the fact that if it wasn't paying off we wouldn't be getting it, would we?

Miss Egan: I think one good way to evaluate this is to go into a supermarket on Friday or Saturday evening when adults are shopping with children, and listen to the type of directions and requests which parents receive from children. It is really very, very interesting as well as appalling sometimes to see how much parents' selection of various foods is determined by children's requests based on what they hear on TV or radio. It is really an hour well spent--just standing and listening!

The social and cultural implications of food and food habits[1]

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The last few decades have witnessed a rediscovery by the health professions that man cannot be understood out of context of his total environment. The concept that the social and cultural components of this environment are of equal if not of greater significance than the physical is not entirely new, but only recently have attempts been made to organize and formalize this knowledge.

Recent articles have indicated that these social and cultural factors may play crucial roles in the whole broad area of interest to health workers, from the dynamics of disease processes in the individual (1, 2, 3) to the development of communitywide health promotion programs (4, 5).

It is no coincidence that one of the major areas of interest common to both the health professions and the social sciences should center round the topic of food. From the dawn of medical history the role of food in health and disease has been under investigation by health workers, and its significance increases as further advances in nutritional knowledge are made. For social scientists a study of foodways and the system of attitudes, beliefs, and practices surrounding food may constitute an important technique in unraveling the complexities of the overall culture pattern of a community (6). Health workers are in addition now learning that food habits are among the oldest and most deeply entrenched aspects of many cultures and cannot therefore be easily changed, or if changed, can produce a further series of unexpected and often unwelcome reactions.

With this degree of interest in food common to social scientists and health workers it is perhaps surprising that so little effective application of social science concepts has been made to nutrition programs. In my opinion two major reasons may account for this. The first is the lack of effective communication between the two sciences. The second is the degree to which we as health workers are "culture bound" and tend to reject concepts and patterns of behavior different from our own.

Lack of effective communication does not only relate to the difficulties resulting from specialized terminology, although there is little doubt that this is a problem. Of greater moment is the fact that health workers and social scientists approach their common goal, in this case study of food, from two entirely different frames of reference without any common meeting ground. Social scientists, usually being untrained in the field of health, cannot be expected to interpret the possible relationship of many of their findings to health and health programs, nor is this necessarily of particular interest to the majority of them. Health workers, not being aware of the areas of competence of the social sciences, cannot specify the contributions they might expect from these disciplines, especially in initiating or evaluating programs.

This paper is an attempt to illustrate by means of a case study some of these social and cultural factors of significance in programs designed to change food habits; an attempt will be made to derive certain general principles from this illustration and finally some of the specific contributions that social scientists could make in such programs will be indicated.

Before considering these factors, however, it is desirable, I believe, to elaborate somewhat on the degree to which we as health workers are "culture bound."

The type of training the majority of us receive makes it difficult for us to see any merit in points of view or patterns of behavior different from our own. Food patterns, for

[1]This paper was originally presented before a Joint Session of the Dental Health, Food and Nutrition, Public Health Education, and Public Health Nursing Sections of the American Public Health Association at the 84th Annual Meeting in Atlantic City, New Jersey, November 14, 1956, and is published in the June, 1957, issue of the American Journal of Public Health, Volume 47, pp. 732-740.

example, which differ from our concepts of "good" practices are automatically labeled "bad." Attitudes and beliefs which differ from ours are regarded as "illogical," "misinformed," or "wrong." The people who hold these different concepts are regarded as "ignorant" or perhaps "superstitious," "childlike," or plain "stupid."

Unfortunately there are still too many of us today who are convinced that our own particular set of beliefs, attitudes, and practices is the only correct way of life and one that should be emulated by people of all cultures and all social classes. Such a philosophy on our part presumes that only we as professional health workers know what is good for all people. Furthermore, it is frequently our fond belief that our nutritional education is being executed in a "knowledge vacuum," to use the words of Edward Wellin (7), as far as the recipients are concerned; that because the population we are serving know nothing of our nutritional concepts, they therefore have no concepts whatever about nutrition. It is evident that documentation of the relevance of social and cultural factors to health programs is unlikely to lead to any effective application of these concepts as long as such attitudes are maintained by the majority of health workers.

The Case Study[2]

In 1940 the Pholela Health Centre was established on a "native reserve" in the Union of South Africa. Health conditions among the Zulu tribesmen to be served by this Centre were extremely poor. The crude mortality rate was 38 per 1,000 population and the infant mortality rate 276 per 1,000 live births. Poor environmental sanitation and communicable diseases represented two major health problems, but of greater significance, perhaps, was the extensive malnutrition that existed. Eighty percent of the people exhibited marked stigmata of this malnutrition and evidence of gross nutritional failure in the form of pellagra and kwashiorkor was common.

The Pholela Health Centre, charged with the responsibility of providing comprehensive medical care and health services to the population, was organized on the basis of a number of multidisciplined teams. Each team consisting of a family physician, a family nurse, and a community health educator (health assistant) was responsible for the health of a number of families living in a defined geographical area. The major health problems of the area were defined by the teams and broadly classified into "unfelt" and "felt" needs. Health programs to meet these needs were then initiated on two planes in which the promotive-preventive and curative aspects of the services could be integrated. Basically the function of the health assistants was to develop community health education programs whereby the "unfelt" needs could be made apparent to the community, and members of the community stimulated to change aspects of their way of life to meet these needs. Simultaneously curative and preventive services of individuals within their family units was the responsibility of the doctor and nurse on the team. Each individual was offered complete periodic health examinations, followed by a family conference to discuss the health problems of that family, and any illness in any family member would similarly be treated by his family doctor and nurse. At the clinical sessions the community health education programs were reinforced in the specific advice given the individual patients.[3]

The case study to be presented here is a description of one program which was designed to change the food habits of mothers and infants.

Dietary surveys revealed that the existing diet consisted principally of a single staple, corn, prepared in numerous ways, supplemented by dried beans, negligible amounts of milk, and occasionally meat and wild greens. Potatoes and pumpkins were eaten seasonally, and millet (sorghum) was fermented to brew beer which was consumed in

[2] This study was first published in Health, Culture and Community, pp. 15-41. Edited by B. Paul, Russell Sage Foundation, 1955, under the title "A Comprehensive Health Program Among South African Zulus."

[3] For a more detailed description of the techniques and programs of the South African Health Centres see:

Kark, S. L., and Cassel, J. The Pholela Health Centre--A Progress Report, South African Med. Jour. 26: Feb. 9 and 16, 1952, pp. 101-104 and 132-136.

Kark, S. L. Health Centre Service--A South African Experiment in Family Health and Medical Care, Social Medicine, Chapter 26. Edited by E. H. Cluver, Central News Agency, Johannesburg, South Africa, 1951.

large quantities. Whenever funds allowed, sugar and white bread were also bought. Even though this was a rural agricultural community, poor farming methods and poverty of the soil made it impossible for the vast majority of the people to raise adequate food supplies. Consequently a large percentage of the food consisted of refined cornmeal purchased with money sent home by the migrant laborers. Furthermore, during the best month of the year, if all the milk had been equally distributed, only one-twentieth pint per head per day would be available.

Having determined the existing food patterns, an analysis was then made of the major factors responsible for the inadequacy of the diet. These included the extreme poverty of the people, the extensive soil erosion, certain traditions as to which foods were customary, and inefficient use of available resources. In addition, prevailing cooking methods frequently destroyed a large fraction of what nutrients were present.

As anticipated, early attempts at group meetings and home visits to demonstrate the causal relationship between a poor diet and a low standard of health encountered considerable skepticism. People maintained that their diet had always been the diet of their people. On this same diet, they maintained, their ancestors had been virile and healthy and consequently there could be no possible relationship between the present diet and ill health. It was difficult to refute this point without having any reliable information about the health of their ancestors.

A search of the available literature, however, revealed that the present diet had not always been the traditional diet of the Zulus and other Bantu-speaking tribes. Prior to the arrival of the whites, the indigenous cereal had been millet, corn having been brought into the country by the early white settlers. Because of its greater yield, corn had gradually supplanted millet as the staple cereal, millet being reserved solely for brewing. Furthermore, historically the Zulus were a roving pastoral people owning large herds of cattle; milk and meat had played a prominent part in their diet. So important was milk as an article of food that no meal was considered complete unless milk was included. The relatively fertile nature of the land at that time and the extensive wild game resulted in further additions of meat to the diet and a plentiful supply of wild greens. Roots and berries gathered from the forests were also extensively used.

These facts were presented to the community at the regular small group meetings initiated by the health assistants and discussion invited. In particular, confirmation was sought from the older members of the tribe, and in the majority of instances such confirmation was received. This endorsement by the prestigeful, usually most conservative segment of the population ensured that interest in the topic of food would remain high. Realization that the modern diet was not as traditional as had been supposed assisted in reducing resistance to the changes that were later advocated.

At subsequent meetings concepts of digestion and the functions of different foodstuffs were discussed. It was widely, though not universally, held that in some manner food entered the blood stream, but what happened to it thereafter was unspecified. Greatest interest was aroused by considering how a fetus was nourished in utero; discussion on this point would sometimes continue for hours. Many women were of the opinion that there must be a breast in the uterus from which the fetus suckled, but others indicated that calves in utero must be receiving nourishment in the same way, and no one had ever seen a breast in a cow's uterus. Some women maintained that the fetus was nourished by the placenta, as the Zulu term for placenta literally means "the nurse." But when challenged they were unable to explain how the placenta could feed the baby.

The result of these and similar discussions was to arouse a desire for further knowledge. When the functions of the placenta and umbilical cord were explained by use of posters and models, the interpretation was readily accepted. Over a period of time the concept that body tissues were nourished by the food via the blood stream became generally agreed upon.

As the concepts about the digestion and absorption of food began to change, it was possible to direct discussion to the function of different types of food. The view generally held was that all food had only one function, to fill the stomach and relieve hunger. This view was challenged, however, by a number of people who maintained that certain foods gave strength and others were fattening--a bodily attribute much valued in this community.

Gradually it became more generally accepted that different foods had different functions, particularly in regard to infant health and nutrition. In attempts to improve the infant nutrition, and in view of the existing resources, it appeared that green vegetables, eggs, and milk were the foods on which greatest emphasis should be laid.

Introduction of green vegetables.--Even though green vegetables had rarely formed part of the diet, and then only in a few families, their introduction for a number of reasons appeared to be a promising first step. Wild greens gathered from the forests had always been eaten and were enjoyed, but due to soil erosion these were becoming increasingly difficult to find. There were no very strong feelings or set of beliefs about green vegetables. The climate was suitable for their cultivation and each home had adequate space for use as a garden. Thus no marked objection to green vegetables was anticipated, their similarity to wild greens could be usefully exploited, and resources, at present unused, could be brought into use to make the vegetables available. In view of these circumstances the procedures that appeared to be necessary consisted of:

1. Attempts to increase the motivation of the people to eat vegetables. These included emphasis on their nutritional value in terms of the concepts previously discussed; relating their taste to that of the familiar wild greens; and emphasis on the financial savings that could be made by replacing part of the purchased food by homegrown vegetables. These views were presented at the group discussions held in the homes of the people, and reinforced at the clinical sessions, particularly the prenatal and mother and baby sessions.

2. The second procedure consisted of attempts to demonstrate the means by which these vegetables could be obtained by the families. A demonstration vegetable garden was developed at the Health Centre, where members of the staff could themselves gain practical gardening experience and where the families could have the methods of growing vegetables demonstrated. Vegetables from this garden were made available to certain families on prescription. The more cooperative families were assisted in starting their own gardens and as the number increased a seed-buying cooperative was initiated. Over the years a small market was established where families could sell their surplus produce, and annual garden competitions and an annual agricultural show were organized. As members of the Health Centre staff, particularly the health assistants, became more proficient gardeners themselves they were able to give practical advice and assistance to any of their families who desired this.

3. The third procedure which was incorporated simultaneously with the other two phases of this program consisted of attempts to demonstrate the palatability of the vegetables and the best means of incorporating them into the diet without destroying their nutrient values. Cooking demonstrations were organized both at the discussion groups and for the waiting patients at the Health Centre sessions. As far as possible, traditional means of preparing food were adhered to except that green vegetables were substituted for wild greens. Over the years different recipes were introduced and women from the area who were successfully incorporating vegetables into their families' diets were encouraged to organize these demonstrations.

The response of the community to these programs was satisfactory. In 1941 the first garden survey revealed that only 3 percent of the homes had any form of vegetable garden, and that a total of five varieties of vegetables were growing. By 1951, 80 percent of the homes had gardens and were growing more than 25 varieties of vegetables. This response

was all the more gratifying as the size of the area served had been increased sixfold over the course of the 10-year period, so that some families had had only relatively recent contact with the program.

Increasing egg consumption.--The attempts to increase the consumption of eggs encountered somewhat greater resistance than did the vegetable program. Surveys revealed that over 95 percent of the families had poultry, and that eggs were relatively plentiful at certain seasons of the year. Eggs were infrequently eaten, however, but in contrast to vegetables, very definite views were held about them. It was considered uneconomical to eat an egg that would later hatch and become a chicken; egg eating was regarded as a sign of greed; and finally eggs were thought by some people to make girls licentious.

After prolonged staff meetings the consensus of team opinion was that none of these beliefs had any deep emotional association and that probably the concept of it being poor economy to eat eggs was the most important of the factors preventing further use being made of eggs. The program developed, based on this analysis, therefore was patterned on the same general lines as the vegetable program. Techniques for improving the egg yield whereby eggs could both be eaten and leave sufficient for breeding were discussed; the nutritional value and palatability of eggs were stressed both in the community education programs and for each specific patient at the prenatal and mother and baby sessions; and various methods for incorporating eggs into the diet without any marked modification of prevailing recipes were demonstrated. The fact that certain adverse views were held about eggs was of importance, however. Even though these views were not strongly held, they indicated that relatively greater effort would be required to motivate the community to use eggs.

As might have been anticipated, therefore, response to this program was slower than to the vegetable garden program. In the course of 12 years, however, the techniques proved relatively successful, and the consumption of eggs, particularly in infant diets, steadily increased. Furthermore, towards the later years of the program, families began to put excess eggs on the local market and found purchasers among their neighbors, a phenomenon totally foreign to this community.

The milk program.--Increasing milk consumption proved to be a considerably more difficult and complex problem. Not only was the supply extremely limited, but frequently the available milk was not being consumed. In particular, women took no milk whatsoever, and this became a matter of some concern to the Health Centre in regard to expectant and lactating mothers. Investigation disclosed that the taking of milk was associated with very deep-seated beliefs and customs. Only members of the kin group of the head of a household could use milk produced by that man's cattle. This restriction applied equally to men, women, and children, so that no family could supplement its milk supply from another family outside the kin group, but the situation was more complex in the case of women.

During her menses or when pregnant, a woman was thought to exert an evil influence on cattle and was not allowed to pass near the cattle enclosure or partake of any milk. This applied even in her own home. Since it was usually impossible for men to know when a woman was menstruating, it was customary to exclude milk from the diet of the majority of girls once they had passed puberty. When a woman married and went to live with her husband's family group she fell under a double restriction. Not only was she a woman, but she was now in the home of a different kin group. Consequently, of all people in the community, married women were most rigidly excluded from partaking of milk. Under two conditions only might she have milk: If her father presented her with her own cow at the time of her marriage she could use milk from that cow, or if her husband performed a special ceremony involving the slaying of a goat, she would be free to use any milk in his home. Because of the general poverty of the area, neither of these two procedures was common although several decades ago they were not uncommon in certain families.

The reasons for these customs were lost in the mists of antiquity, not even the oldest people in this community being able to explain them. "This is our custom, and this is how it has always been" was the only explanation offered. In all probability it is likely that the customs are closely related to native religious beliefs centered around ancestors. Even today when some 60 percent of the community are Christians, ancestors play a very important part. A person feels himself to be dependent upon the good will of his ancestors to protect him from all manner of misfortune and ill health. The link between a man and his ancestors is his cattle, and ceremonies of propitiation involve the slaying of cattle. Accordingly, anything that might have an evil influence on the cattle would endanger the relationship between a man and his ancestors. In addition, a married woman continues to have her own set of ancestors derived from her family and may not interfere in any way with her husband's.

The degree to which concepts concerning milk were enmeshed in the overall cultural pattern made it obvious that the general approach used for increasing vegetable and egg consumption would be of little avail. Considerable motivation for taking milk already existed in the community, and attempts to increase this motivation would be unlikely to change existing practices. Attempts were nevertheless made on several occasions to change these practices by stressing the importance of milk as an ideal food for lactating and expectant mothers, but were of no avail.

Analysis of the underlying beliefs indicated clearly that the barrier to greater milk consumption lay in the link between milk and the specific cattle from which it came. If milk from cows which did not belong to any member of the tribe or any other related groups could be introduced into the community, presumably the barrier would be overcome. The most practical method of accomplishing this was to make powdered milk available.

Accordingly supplies of powdered milk were obtained by the Health Centre and made available to families on prescription. No secret was made of the fact that this powder was a form of milk, but it was stressed that this milk did not originate from cows belonging to any of the Bantu people.

From the inception of this program it was clear that no stigma was attached to the use of the powdered milk. Even the most orthodox of mothers-in-law or husbands had no objection to this powder being used by the young women of their families. The only barrier that remained was that it was an unfamiliar foodstuff with a strange taste. To overcome this, the familiar formula--increase the motivation, help make the product easily available, and demonstrate methods for incorporation into the diet--was all that was necessary. The application of these techniques produced a demand for the powdered milk that, over the years, steadily outgrew the Health Centre supply. Families were then encouraged to budget their slender incomes to allow for its purchase from the local stores. By 1954 it became apparent that in some families the demand for milk had become too great to be met from either of these two sources. To the gratification of the Health Centre staff, permission was given in a number of the more educated families for women to consume milk from the family cows without any marked reaction from the rest of the community.

Some of the results of the Health Centre's programs are of interest. In the course of 12 years the infant mortality rate dropped from 276 to 96, pellagra and kwashiorkor all but disappeared from this area, and the average weight of the babies at 1 year had increased by 2 pounds. This trend, as far as was known, was not occurring elsewhere in the country, and in fact in neighboring areas where the Health Centre provided only medical care but no community health education program no such changes were discernible.

General Principles

From this illustration it is now possible to derive some guiding principles indicating the significance of social and cultural factors to health programs in general.

The first principle is self-evident. Health workers should have an intimate detailed knowledge of the people's beliefs, attitudes, knowledge, and behavior before attempting to

introduce any innovations into an area. While this principle is frequently violated in practice it is certainly no new concept in public health. What is not so well recognized however is that the intimate knowledge of these factors is but the initial step in the evaluation of cultural factors.

The second principle, which is usually more difficult to apply, is that the psychological and social functions of these practices, beliefs, and attitudes need to be evaluated. As stated by Benjamin Paul (4), "It is relatively easy to perceive that others have different customs and beliefs, especially if they are 'odd' or 'curious.' It is generally more difficult to perceive the pattern or system into which these customs or beliefs fit." It is in this area of determining the pattern or system into which these customs or beliefs fit that social scientists can probably make their greatest contribution to health programs. This is the knowledge that will help determine why certain practices obtain, help predict how difficult it will be to change them, and give indications of the techniques that can be expected to be most helpful.

A third principle that should be emphasized was unfortunately not well illustrated in the example but is of fundamental importance in the United States. It should be appreciated that while it is permissible for some purposes to consider an overall "American Culture," numerous distinct subcultures exist, sometimes even within a single county. These subcultural groups must be carefully defined, as programs based on premises which are true for one group will not necessarily be successful in the neighboring group. This also is an area in which we as health workers can receive invaluable assistance from social scientists.

There are a number of very interesting illustrations of the importance of these subcultural groupings in regard to food habits in the United States, of which only two will be mentioned. Margaret Cussler and Mary de Give (8) differentiate five major subcultural groupings in the South: white owners, white sharecroppers, Negro owners, Negro sharecroppers, and wage laborers. To a greater or lesser degree each of these groups had different attitudes, beliefs, knowledge, and practices in regard to food, and for different reasons. John Bennet, Harvey Smith, and Herbert Passin (9) have distinguished in the southern part of Illinois eight separate and distinct subcultural groups, each with their own set of attitudes toward food. Interestingly enough, none of these attitudes was based on a knowledge or interest in the nutritional value of the foods. Unfortunately many nutrition programs today are designed for application to the total area under the jurisdiction of the nutritionist--an area that is often very large. The underlying premise would be that this total area--region, state, district, or even county--has a completely homogeneous culture. I submit that greater concentration of a nutritionist's time in a carefully defined subcultural group with the development of programs specifically designed for that group would eventually be more efficient in effecting permanent changes in food habits.

There are a number of other social and cultural factors, some of which have been implied in the case study and which, though important, have not been emphasized. These include a determination of the leadership patterns within a community, a definition of the decision makers in a family or larger institution, and determination of the status of various groups within the community and the status of the health worker in comparison to these groups. The importance of these factors has been well recognized by health workers in planning and executing programs and requires little further emphasis here. In this connection it is of interest to note, however, that several investigators (8, 10) report that in the majority of American homes all major food decisions are made by the housewife. Concentration on the nutritional education of the housewife alone therefore would probably be more beneficial than attempts to educate the total community in many subcultures in the United States.

A further area in which profitable collaboration between social science and health could occur is concerned with the prediction of the long-range effects of any program. Following a program two interrelated series of questions would be of interest to all health workers. Firstly, are there likely to be any unanticipated repercussions of the program, and secondly, how permanent can the changes introduced be expected to be?

The answers to these questions will be largely determined by the degree to which the innovations are absorbed into the cultural framework and the impact they have on other facets of the culture. For example, in the illustration used in this paper, the effect of the acceptance of new dietary patterns by the Zulu women might conceivably eventually threaten the status of males as decision makers in that society. Similarly, permission given to women to take milk might eventually be one of the factors changing the intensity of religious beliefs.

By indicating the possible effects on other segments of the culture, and by determining the degree to which the concepts embodied by the new program have been absorbed into the existing cultural framework, social scientists would have a significant contribution to make in sensitizing health workers to the possible long-range effects of their programs.

In conclusion, I would like to return to the question of the degree to which we as health workers are "culture bound." Unless we can avoid cultural bias or ethnocentricity in our dealings with people, much of the crucial data will not even be made available to us by members of the community. Even should we be fortunate enough to have access to some of these facts, our analysis of the situation will continually be distorted through imposition of our own culturally determined system of values onto the behavior of others. In this regard social scientists can perhaps help us to become somewhat less "culture bound," but fundamentally for many of us this requires a major reorientation of our own philosophy which only we ourselves can achieve.

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Discussion Groups

Summary of work-study group discussions

INTRODUCTION

Workshop Groups

Discussion groups worked together for about half the scheduled time of the conference--all one day and a part of the next morning. The groups were small--about 12 people in each. Individuals were assigned to these groups in such a way that the membership would consist of people from different localities, agencies (both public and private), and professional interests, in order to bring a wide range of views to the problems discussed. The resulting diversity of interests of the groups was very favorably commented on by many participants. One remarked she had never before been in such a homogeneous, heterogeneous group.

Topics

The topics for discussion suggested by the planning committee had been ranked in order of interest by the participants before they came to the conference, and the participants had contributed others of their own to the list.

Each group was free to select topics from this list as the basis for its discussions. Although the choice varied among the groups, the topics were so mutually interdependent that most of those on the list were brought into the discussion of all groups. As one group remarked, "... the objective as stated [increasing the effectiveness of nutrition education] would of necessity be dealt with by working on specific areas of the problem..."

Helping people to achieve better food habits was the most frequently selected topic. Others chosen by many of the groups included several on ways of approaching people and improving their attitudes, on nutrition training for workers in related fields, and on food guides and other nutrition information.

Summarized Reports

The following represents both a composite and a cross section of the work group reports. Although the major part of the summary represents a consensus of a number of the groups, individual comments of particular interest have also been included.

DISCUSSIONS

Food is Good

Many people think of nutrition as "eating what I don't like because it is good for me." It is necessary to combat the idea that nutritious food doesn't taste good. Teach that food is good rather than is good for one, teach in terms of foods instead of food constituents. Try not to make nutrition a medicine. A properly, attractively prepared food will be eaten. Don't place a moral value on food.

Some Food Problems

Do we categorize foods too much? ". . . foods for the teen-ager . . . the aged . . . " Should we make good food practices . . . "fads?" . . . Do we start early enough using the preventive approach to weight control? . . . Could we emphasize different party foods such as raw fruits and vegetables, particularly for children? . . . Let us look at the current food situation as it is (that is, convenience foods are here, and there is more eating away from home), not as we might like it to be for best nutrition.

A new approach to teaching is desirable, to bring about change in food habits. Poor methodology fosters a dislike of nutrition education. Nutrition education should be simple, direct, immediate, progressive, positive. We need to make people aware there is a problem . . . Simple terminology is most effective--"nutrition" scares some people.

Food is a Part of Any Culture

Food means more to people than what they eat. Food prejudices influence nutrition education. Poor food habits are often due to food likes and dislikes. Culture and available foods also influence eating habits. It is essential to see how a problem fits into the cultural pattern, and to recognize the cultural factors that influence food habits . . . Before trying to adapt our general nutrition materials to other (for example, foreign-born) culture groups, we could study their eating patterns to develop appreciation of different heritages . . . Change is not always needed. Diets differing from "normal" patterns may still be adequate . . . We could help people include readily available foods which would make a good contribution to the day's diet, and use the daily food plan that seems most useful and reliable.

Know Your Group

Understand the group you're trying to reach before you begin to work with them--know their background. In teaching nutrition, start where people are. Listen to find out what they know and build on what they already have--don't deprive them of everything they like. Plan an adequate intake around their own pattern. Emphasize their interests.

Involve the Learner

Start from the learner's point of interest and build on this . . . Present practical information. Provide activity as a learning experience. Use illustrations that fit . . . Help people feel their own worth . . . Try to keep the learning situation pleasant . . . Motivation is important in improving food habits. Use learning experiences that are real, life-like, and "strike home."

Teach Children Young

Taste is formed early, and is difficult to alter. A school lunch tasting program helps children learn to like unaccustomed foods. In one school some of the children sample the new food and tell the rest about it. In another school it is served in home rooms, and the students give their reaction. If they do not recommend it for lunchroom use, they must tell why . . . A teacher eating the same foods with the children in the lunch room may help set patterns for eating habits. Work for good habit formation--approach positively . . . People teaching nutrition should be good examples--"practice what you preach."

Nutrition Education in Schools

School lunch programs in many states are helpful in integrating nutrition education in the school, and have tremendously advanced introduction of nutrition into the curriculums of elementary schools. Children carry home the ideas they receive. Carefully planned participation of pupils in the school lunch program can enhance its value as a learning experience. One way for doing this is to provide opportunity for children to help in menu planning. Other activities--simple surveys of foods eaten for one or more

days--may stimulate children's interest in foods. Animal experiments in connection with science or home economics classes are effective as teaching devices, although they do have some weaknesses unless properly designed and carefully interpreted. In one school lunch project the learning theme changes and develops as the child develops. School lunch programs can also be integrated with education in teaching children how other people live, how labor and human energy can be lost through waste in food. School lunch programs can teach social customs associated with food.

An attitude of acceptance and of participation in the school lunch program by school administrators and faculty is desirable. Only 28 percent of the U. S. school enrollment is now participating in the school lunch program, and not all of the participating schools are providing nutrition education in connection with the lunch program. In some places school lunch is looked upon as something for low-income people only. Involvement of more people, such as parents and administrators, in the school lunch program would be worthwhile. Advance publishing of school lunch menus often stimulates parents' interest in the school lunch programs and may help them in meal planning. Cooperation of all groups involved (teachers, cooks, lunch managers, school administrators, pupils, and parents), making use of various devices, is essential to get the most value from the program. Its educational aspects might well be broadened to include workshops. Cooperation of various groups in school lunch workshops helps increase understanding of each other's problems in making the school lunch program most effective. Such workshops can give training in nutrition fundamentals to elementary teachers and other participants. School lunch people have something to contribute and something to gain from participation in teachers' conferences. They can help teachers understand what foods are needed by growing children, and teachers in turn help them understand how to motivate learning.

Focus on the Community

Every community has resources that can be used in unifying groups to work together, and involving local people in the nutrition program. In many communities groups and individuals are already concerned with nutrition education, but there is a need for integrating their work with that of the total community and school.

Surveying the situation can be an effective means of obtaining community interest and support, especially if the services of community leaders are enlisted to identify local food problems in collecting information.

Teacher Training

Nutrition education is not the exclusive responsibility of the Home Economics Department. Like "good English" it is more effective if accepted as a school goal. If teachers and administrators have some understanding of health, including foods and nutrition, they are better able to help children in this area. At present many elementary teachers get no nutrition training. Many recommend some nutrition education as a requirement for certification of elementary teachers. Short courses and conferences could also be useful in revitalizing teachers' nutrition information. This could be done through school lunch workshops, teachers' meetings, PTA meetings, and inservice education programs. Nutrition Councils could help in providing regular programs of refresher courses for teachers.

The help of nutritionists and other personnel from several agencies in inservice education broadens the view of problems and makes for better cooperation in solving problems.

Many teachers still need to be convinced of the importance of nutrition education.

Better Training for Nutrition Workers

Nutrition educators also need to keep up to date, and to seek constantly ways to base their teaching on scientific facts. Some suggestions for keeping professional people up

to date are getting together in conferences by regions, pooling resources, having one good publication which will serve as a clearing house for all to use. More training in nutrition for those who serve as resource people would also be valuable, as would recruitment of more trained people in nutrition.

Joint staff education of hospital, welfare, and health department personnel has proved helpful in facilitating exchange of information about patients' food habits, home conditions, welfare allowances, and arrangements for following up dietary problems.

Nutritionists have also been providing consultations to nursing homes without trained food personnel, conducting workshops for operators, participating in teaching days for staff, and assisting with establishment of standards for food service.

Basic nutrition education in the training of those who influence health and welfare, particularly social workers, physicians, dentists, and nurses, is desirable. A published survey of existing nutrition education in medical, dental, and nursing schools might arouse the interest of health personnel in this problem.

At the same time, if nutrition people received more education in social science, they might be more effective in their teaching.

Teen-agers Are Special

There is a particular requirement for more nutrition education directed to teen-agers, geared to their interests and needs. Girls especially often have poor food habits. Education of this group could be a starting point for better family nutrition. An effective teaching method with 4-H club girls in one State uses a 5-year plan in which a different food group selected from the Basic 7 is studied each year. Teaching is done in connection with preparation of the food, and its nutritive value and place in meals are stressed . . . Adolescents can sometimes be reached through their interest in learning facts for which they can see immediate application. This can be done through their taking part in a program or project such as a scientific exhibit. Participation of student leaders in nutrition projects may create interest on the part of other teen-agers. Along these lines, several State Nutrition Committees have promoted school surveys on opinions and attitudes about teen-agers' nutrition. Usually they are self-surveys, the teen-agers doing the interviewing . . . Teen-agers might be interested in reading good articles on nutrition in magazines scaled to their level. There is a great need for teaching materials adapted to this age group . . . The poor food habits of teen-agers are often related to the fact that they eat a poor breakfast and consume lots of snack foods. In some cases it might be effective to point out the relation of chocolates and sweets to acne . . . It is important to help the teen-ager realize the part good food habits play in his physical, moral, and mental development.

Older People Have Problems, Too

Many older people have misconceptions regarding nutrition. Their requests for help with diets and their interest in magazine and newspaper articles show that they are grasping for information on this subject. They might be approached through the goal of wanting to keep well, to look nice, which might give them a sense of importance. Nutrition information could be presented to them as "Adventures in Eating" or "Gourmet" guides. As with other age groups, suitable educational and teaching materials directed toward them would be useful in teaching . . . We have yet to learn how to bridge the gap between the diets of children and the health conditions of middle age.

Combat Misinformation With Facts

Nutrition educators have a responsibility to serve as an information link between research and the general public's use of what is known. More, and more accurate, scientifically based, sound nutrition information is required. It would be well if all health authorities would combine to discourage promotion of false nutrition information . . .

Higher standards are also desirable for nutrition publications. A committee available to check nutrition information in textbooks would be helpful. The American Medical Association Council on Foods and Nutrition has a voluntary review service to check free-lance publications submitted to it . . . In considering new findings and ideas in nutrition, let's not lose the concept of the new, but explore areas that may be controversial.

To help combat misinformation nutritionists can make use of mass media (radio, newspapers, TV) to get the facts across. They can give talks, cooperate with and write for magazines, contact editors and professional writers, prepare more popular material on nutrition, and counsel with advertisers. Some Nutrition Committee members are already doing so, and meeting with good responses. We need to make sound information more attractive than misinformation, to have more glamour in the facts. The technics of mass media might be explored as aids in nutrition education.

There is a dearth of some kinds of nutrition education teaching aids. Bibliographies of sound nutrition materials have proven helpful to teachers and lay leaders. More material adapted to different age levels is needed by teachers. Perhaps more publishers could be stimulated to publish good books on nutrition education for the lower grades. Commercial companies might be willing to do more in the preparation of teaching aids. It would be fine if more food industries would pool their resources for nutrition education. State Nutrition Councils might be able to publish educational materials, sharing the costs with other groups, or more of them might make use of newspapers.

Nutrition in the Home

A vital home interest in nutrition education would go a long way toward solving the problem. Adults in the home cooperating with the school make a strong team. PTA groups could do much to encourage such working together.

Some extension workers hold evening meetings so that entire families can come. These are particularly effective when short and on a topic of interest to all. Homemakers often want and need more knowledge about what foods to serve and why, variety in food preparation, quick menus, food habits, special diets, and budgeting. Getting more for the food money can serve as a strong motive for learning about food values, especially when the family income must be budgeted. Homemakers employed outside the home have a special interest in effective management of time, energy, and resources.

Nutrition Committees

For effective cooperative work, it is important to include such groups in Nutrition Councils as doctors, dentists, educators, social workers, editors and newspaper people, representatives of women's organizations and other community associations. Retired people with nutrition education experience are often good additions to such a Council. State Nutrition Committees are effective intermediaries in nutrition education as they evaluate information, publish materials, help with projects, and meet with other interested groups. For these and other reasons, State Nutrition Councils ought to be strengthened and utilized. Where they are no longer active, States might explore the need for such Councils.

Methods in Nutrition Education

Most of the study groups discussed and listed effective and ineffective methods of nutrition education. Ineffective methods were mentioned by only a few groups. Teaching facts as such and talking about nutrients instead of foods, were mentioned as deterrents. The use of too technical language was also decried. The methods by far the most often talked about were effective ones. The following statements summarize those effective methods mentioned most frequently in the reports. They are given in the order of frequency, beginning with those mentioned most often.

Use of the school lunch program as a teaching situation was cited most often by the groups as an effective way of promoting nutrition education. If a way is found to involve the learner in the nutrition program, a highly effective nutrition education situation usually results. Inservice training, or workshops, or meetings as similar training, were considered effective means of giving nutrition education by a number of the groups. Mass media were reported by several groups to be effective channels of nutrition education. Opportunity for teachers to gain some background in nutrition was considered necessary if they in turn are to support nutrition programs in the school. Other suggestions for bringing about effective nutrition education situations included combining nutrition with other courses in school, participation of children in school lunch menu planning, animal experiments, participation--particularly of teen-agers--in projects, and use of food or food models and visual aids.

Highlights: Concepts, problems, and recommendations

Each group was asked to summarize its work in terms of "highlights" that seemed to stand out at the end of the discussion. These were submitted to a committee which was asked to summarize and coordinate the reports of the 12 groups and present the result to the total conference.

This compilation was prepared by a committee whose chairman was Johnie Christian, Office of Education, and presented by Anne Lee and Eugenia Whitehead.

A flannel board and walkie-talkie microphone were made available for this presentation. The animated repartee of the reporters as they presented the highlights of the summary received enthusiastic response from the audience.

The summary points were:

A. Concepts

1. Our way of life is a changing one, and nutrition education must also change if it is to be adaptable to life. No one pattern of nutrition or of learning is the final answer.

2. Simple, direct methods with some immediate application are usually most effective in teaching.

3. In helping people improve their nutrition habits it is important to begin with their present practices and modify these only as much as necessary to achieve good nutrition. Put people before food.

4. Effective teaching depends upon knowing the learner--the cultural, social, and economic background that influences his attitudes and thinking. Teaching should then be adapted to the situation.

5. A positive approach is important in teaching--start with the learner's interest and his point of view rather than the teacher's knowledge of nutrition.

6. The early years, up to 14, are the most important from the standpoint of establishing food habits.

7. Learning is most effective when the learner is involved in the process and when this is pleasurable.

8. Learning can be pleasant and still be effective. It can be fun to eat.

9. Nutrition becomes more realistic if taught in terms of food. Food preparation is more meaningful to some than "food values."

10. Evaluation of a program as it proceeds will help insure its success.

11. The programs of the various disciplines concerned with nutrition education should be integrated and present a team approach. This will require some mutual understanding of goals.

12. No one professional group working alone can provide adequate nutrition education; instead, the combined efforts of all are needed.

B. Issues or unsolved problems--concerns

1. Encouragement of more research in nutrition education for various age levels and socioeconomic groups.

2. Bridging the gap between what we know through research and what people actually do--it is hard to improve the effectiveness of nutrition education.

3. Finding ways to understand and reach people at all income levels--adequate income does not insure an adequate diet.

4. Obtaining valid information about people and knowing them as individuals when groups are increasing in size.

5. Helping people feel a responsibility for improving health through better nutrition practices and develop a sensitivity to opportunities and responsibilities for doing this.

6. Getting consumers to understand the responsibility and influence that they have in determining the types of food available on the market.

7. Provision of a "clearing house" to help the public get more accurate nutrition information.

8. Making more effective use of mass media available for teaching nutrition education.

9. Making more effective use of the school lunch in nutrition education and involving the parents, teachers, and children in the success of the undertaking.

10. Provision of nutrition education for those in a variety of professions responsible for and influencing the health and welfare of people. These include doctors, nurses, teachers, and social workers, as well as those whose preparation now includes systematic training in nutrition.

C. Recommendations

1. That the U. S. Office of Education encourage States to make nutrition education a part of the elementary teacher's preparation. That information as to where this is now being done be secured and published in Nutrition Committee News.

2. That a conference similar to this one be called for leaders in elementary and secondary education in order to explore ways of making nutrition education more effective and incorporating it into the teacher education program.

3. That the Interagency Committee consider the advisability of sponsoring or promoting regional conferences in nutrition education followed by State conferences.

4. That the conference go on record as favoring more emphasis on nutrition education during medical and dental training.

5. That more nutrition information in simple, nontechnical language be made available to the lay public in the form of popular leaflets and magazine articles.

6. That each Nutrition Council serve as a clearing house on information and misinformation on nutrition and take responsibility for keeping the public informed.

7. That State and local Nutrition Committees sponsor and encourage additional refresher courses in nutrition.

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Demonstration

From idea to action: Stages in the social action process[1]

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This matter of moving from idea to action is an area that has been given some thought. Out of research that has been done, some findings on a concept of social action are here presented. This may be meaningful to nutrition people, to help you visualize some of the stages of getting ideas across, or in putting a nutrition program into action.

A certain process needs to go on if a certain action is going to result. There is necessity for involvement of people in one's own organization in an idea, for getting them into the act, as well as for moving the idea from the organization to the next level of organizational groups.

We hope this concept will be helpful to you in carrying back the ideas you have gained here to other nutrition workers in your own home territory.

A "social system" is all the organizations and involvement that people have, all of the interrelatedness of these organizations, all of the cultural areas and background that have developed in this particular grouping of people. Knowing the social system background is basic to any kind of action which might be organized around some particular idea. Knowing what happened prior to this present social system is very important.

A problem originates when one or two people recognize it as a problem.

Some problems may be identified, or situations revealed, by an outsider, perhaps through research studies.

One of the first things to think about in connection with getting action on a problem would be who or what group within the very complex social system would be interested. After we determine this we then can plan for their involvement in the early stage of moving out on a program.

What would be some of the first groups we would think of in connection with a nutrition program in a community? In the wide range of people in the professions who are interested in the school nutrition program you might think of public health people, the school lunch people, Extension Service, and many others. You have to know your community to know who these others might be. School nutrition may not be their major interest, but others may have a contributing interest.

Now we have an idea, we have tested it, we are ready to involve a few more people, and test it out with them--this will be an "initiation set." At this stage it is a testing out, to take the problem to another group--a committee, a PTA, or perhaps your own professional workers--to learn if this is something worth their concern. There might be more than one group to whom we go, to involve and test.

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[1] Excerpts and summary of a presentation based on a "Construct of Social Action," from studies made by Joseph Bohlen and George Beal, sociologists, Iowa State College. See pp. 61-64 for diagrammatic outline of stages in the social action process.

The careful initiation of an idea is important. A few of the people to whom it is presented may not carry it through the total process outlined here but through the first steps only. Outsiders, particularly, are likely to drop out now though some of them may continue to be interested far beyond this stage.

A further step is so important it should be given a special heading--"legitimation." Have we involved, or checked or met with and gotten approval of our ideas from those people who are the official legitimizers in a community?

These legitimizers, the prestige- or sanction-giving people, often are very different people from the initiating people. They may be people who will not turn a hand to carry out the idea, but their knowledge is important. They may cause us to re-evaluate and determine whether it is an idea that needs to be moved on. Legitimizers can be individuals or groups. Sometimes prestige people or groups maintain their prestige by being consultants. How many times has a community action program's efforts failed because of neglect to bring in one particular group? As well as being valuable to test out an idea, legitimizers know their social situation--whether an idea will or will not work.

We need to think of our sanction-givers in terms of the social system we are trying to reach. We need to know the sanction givers for a particular group, and we may have to have different lists for different segments of a group or different problems.

Perhaps the course of action shifts, at this step, because the legitimizers have insights that the earlier workers didn't have, and as a result we have an alternate sort of idea, an alternate plan. The idea that went to the legitimizers may be quite different from the idea that now emerges. They may say, "Why don't you take this approach?" or "You are too ambitious." These ideas of important people help you adjust an idea to your social system.

The next step, once the idea is initiated and sanctioned, is "diffusion," in which we involve the people in masses. The initiators go out now to the bulk of people and test out what had been felt to be good up to this time.

Here many people are made aware of this particular idea. It may be said, "One group said this about the idea, so-and-so feels it is something to do, how do you feel about it?" We are developing the awareness and interest stages of the diffusion process Dr. Eppright mentioned in her presentation.

Up to this point the action has been in the development or initiation state, to get the idea out to the people. Finally, the large number of people are the real legitimizers. As Dr. Cassel expressed it, thus far we have been developing an "unfelt need" to a "felt need."

Dr. Fleming talked about students planning their programs around problems which were meaningful to them. In other words, the teacher initiates an idea, it goes through a sort of initiation and legitimation process within the classroom group and then is diffused but still is not adopted as a part of the curriculum or the plan for the week, so to speak, until all of this process has taken place, to a point where the children become involved and it becomes their problem.

It is also important in diffusion that more and more people recognize a problem and feel a desire to take action. They decide, "Yes, let's do this." It is a major step to get many people involved in seeing the real need and desiring action. They define the need at this stage. This is a matter of a larger group of the population accepting the idea that a problem exists and beginning to define it as they see it. The problem or the need as seen by the beginning group now must be redefined, but defined in terms of the situations in which these people live.

Dr. Fleming said that at this stage the students defined a problem as a need, or they said it isn't a need, or they were not ready for it. He was concerned about group readiness, about nutrition readiness.

Some of the various basic ways in which the people about to define the need arrive at the need of any local group are:

Questionnaires--people do enjoy becoming involved in doing these, in being involved in the definition of need as they see it. As Dr. Fleming pointed out, surveys and questionnaires are effective teaching techniques as well as fact finders.

Comparison and competition--is another very good technique, being able to take people from one community to another to show them what is being done and give them an outside view into a local situation.

Competition is acceptable, we all recognize, but it sometimes can be dangerous by overshadowing what we are trying to accomplish.

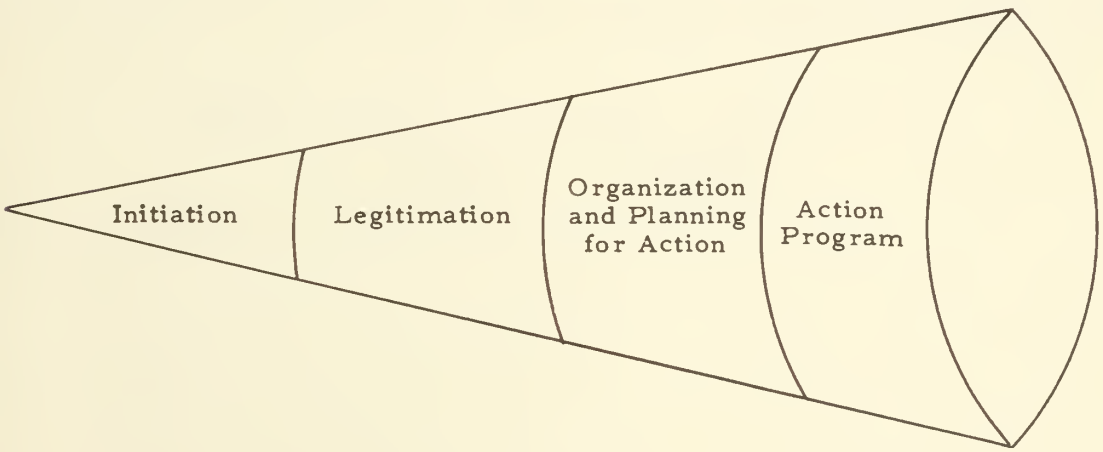
Another technique may be the effort to turn the negative to the positive. For example, there may be a lot of people in a particular county with TB, and people begin to say, "It's too bad we have to have this high TB rate." This can be turned to a positive program and a constructive action program can give satisfaction to the people.

These then are some of the techniques of involving people at this stage of developing awareness, and creating interest in an idea.

After all this process the carrying through of a program often follows rather smoothly. Commitments to action are easier to secure because of interest, goals are set by the people, and a plan of action is outlined and carried out.

Evaluation during and after each step keeps the course clear. The final evaluation of success, shared with all involved and the public generally, usually points up further new problems, ideas, and programs.

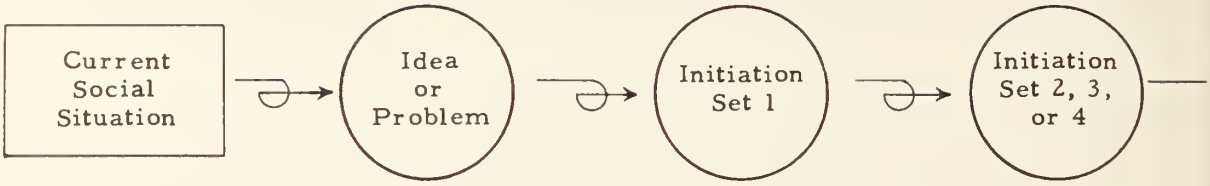
DIAGRAM OF STAGES IN THE SOCIAL ACTION PROCESS[2]



The stages in a social action process make a pattern somewhat like a cone, with a small beginning and ever-widening effects as the program is carried forward from its initiation through approval and acceptance, and organization and planning, into action.

[2] Material adapted by J. Neil Raudabaugh and Loretta V. Cowden from N.P.A.C. Communications Workshop, Michigan 1956, presented by Joseph Bohlen and George Beal, Iowa State College.

INITIATION STAGE



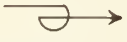
1. All social action takes place in some sort of social system. Dr. Cassel said that man cannot be understood out of context with his total environment. Social and cultural components are important, as are attitudes, beliefs, and practices. Closely related are the food habits to cultural patterns. Food habits are among the oldest and most deeply entrenched.

2. a. An individual has an idea or recognizes a need or a problem.

   b. A decision is reached that the idea or problem is important and that something need be done about it, after two or more people agree on it. (Extension nutritionists have a common interest in the use of milk in a school lunch program and milk dealers may have a complementary interest.)

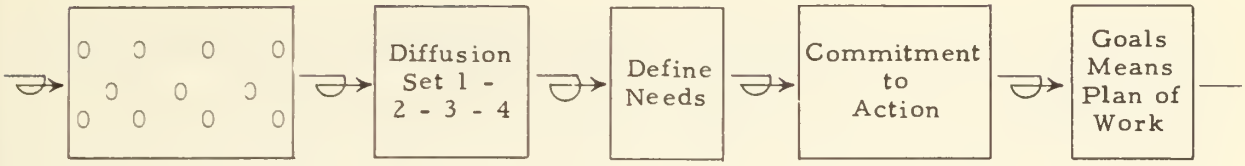
3. Involvement of more people to nurture and support the idea or problem (Initiation Set 1). Each initiation set usually is made up of only a few people who think the idea is important.

4. Often there is involvement of more initiators as the idea or problem is considered further (Initiation Set 2, or 3, or 4).

This symbol:  means each step involves:

1. Evaluation
2. Decision
3. Planning
4. Action

LEGITIMATION STAGE ORGANIZING AND PLANNING FOR ACTION STAGE



5. 6. 7. 8. 9.

5. In almost every community are those persons who informally have the authority and prerogative to place a stamp of approval on a pending project. Technically they are called legitimizers. More often than not different ideas or projects have different legitimizers. They perform a real service because they pretest the project. Overlooked, they may spell defeat for worthwhile projects. Often the project may be redefined by the legitimizers.

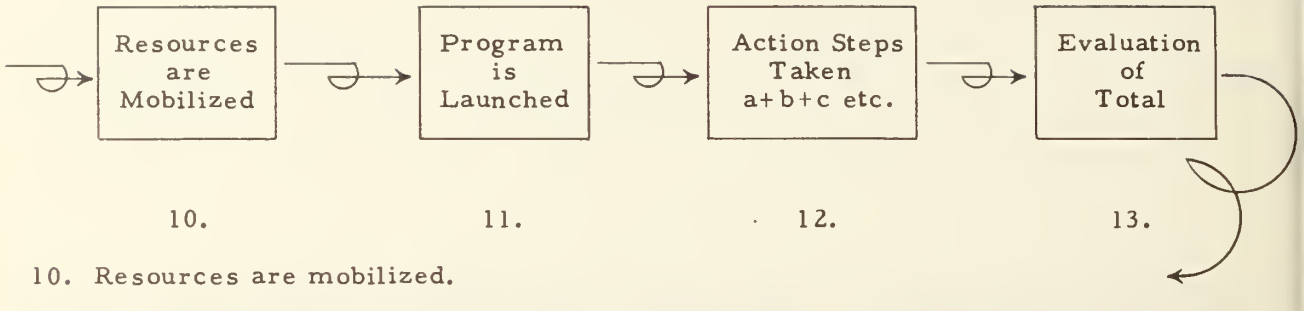
6. The enlistment and support of local persons who have the ability to get public acceptance of ideas. These persons are predominantly action-minded and may not be idea people.

7. Individuals and relevant groups further define needs by surveys, statistics, or other means.

8. Individuals and groups make definite action commitments.

9. Goals and objectives are set. Alternative means and methods are explored. Concrete plans with appropriate organizational structure developed.

ACTION STAGE



10. Resources are mobilized.

11. a. Program is launched.

    b. Individuals, groups, and organizations to be involved are further motivated.

12. a. Action step one of the plan of work is carried through as planned.

    b. Action step two of the plan is adjusted according to the results of action step one and then executed.

    c. Subsequent action steps are carried through in a similar manner.

    d. Progress is continually checked to determine where the action program is in terms of the planned stages.

13. A re-evaluation of the program is made and a new program evolves.

Plans for Follow-up Back Home

Working Together Back Home

The conference closed at a luncheon meeting Wednesday, April 3, where the participants sat together at tables for regions or States so they could begin to plan how they might put the results of the conference to work effectively back home.

Volunteers were invited to report informally to the group, at the luncheon's end, plans and ideas they had discussed. A sampling of the response follows:

The New Englanders told of their regional conference to be held in May. Some of the midwestern States hoped to have a regional meeting within a year, patterned after this national 1957 conference. One State committee and a committee from a city within that State indicated that they would hold meetings back home to report on the conference within a month, and that they were planning to try to determine the nutrition problems within various parts of the State. Several State groups expected to report to State nutrition committees, to local committees, and to their respective staffs, thus carrying the conference home to others at both State and local levels. Reports to groups working in allied fields, such as public health, were also planned.

One State had scheduled a meeting for the purpose of reactivating its nutrition committee. A workshop was to be held in another. A third group spoke of a particular interest in planning ways to reach elementary teachers.

In closing the conference, the luncheon chairman reminded the participants of the value of the conference to the Federal agencies, in renewing their communication with the people from the States.

Plan of the Conference

Plans and program for the 1957 Conference were developed by a working group made up of representatives from the sponsoring agencies. Selection of time and place for holding the Conference, scope, selection of the participants, planning the program, and methods of involving the participants--all these and related steps were determined by the Conference Planning Committee of which Esther Phipard was Chairman.

This committee decided that the number of participants should be limited to 200 so that the work groups would be small enough for all to participate easily in the discussions. Invitations were issued first to State Nutrition Committees. The representation named by these committees was then supplemented to include participants--local, State, and federal--who had previously demonstrated an interest in nutrition education and who were in a position to apply the outcomes in working with large groups.

Leadership teams for the work groups, chosen in advance, consisted of a leader, two recorders, one summarizer of evaluation, and a hostess. The leader, one of the recorders, and the summarizer of evaluation were selected from the State participants; the hostess and the second recorder were from the staff of one of the participating agencies. In providing for the two recorders it was arranged that the one from the State was to prepare a summary of the group's work for use during the Conference; the other was to keep a running record of the group's discussion for use in preparation of the Conference Proceedings.

The leadership teams for all groups met on Sunday afternoon, March 31, for orientation and explanation of what was expected of them. A part of this general training session included presentation of a film, "How to Conduct a Group Discussion."[1]

This orientation meeting was followed by a social hour at which registration was begun for all participants who arrived early. Registration continued on Monday. As members registered they were assigned to one of the 12 work-study groups. In order to have a good cross section, care was taken that the fewest possible duplications of geographic location, work interest, or agency would take place in any one group.

Early in the Conference, group leaders and recorders met to discuss how they would present to the assembly at its final session a summary of the group discussions. They decided to appoint one member from each of the leadership teams to report the main points of his group's discussion to a small committee which would prepare a brief composite summary in the form of a dialogue, with emphasis in the reporting on the important concepts, issues, and recommendations.

[1] Available from Encyclopedia Britannica, 1150 Wilmette Ave., Wilmette, Illinois. 16 mm., sound, black-and-white, 25 minutes, released in 1953.

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